U.S. Department
of Homeland Security

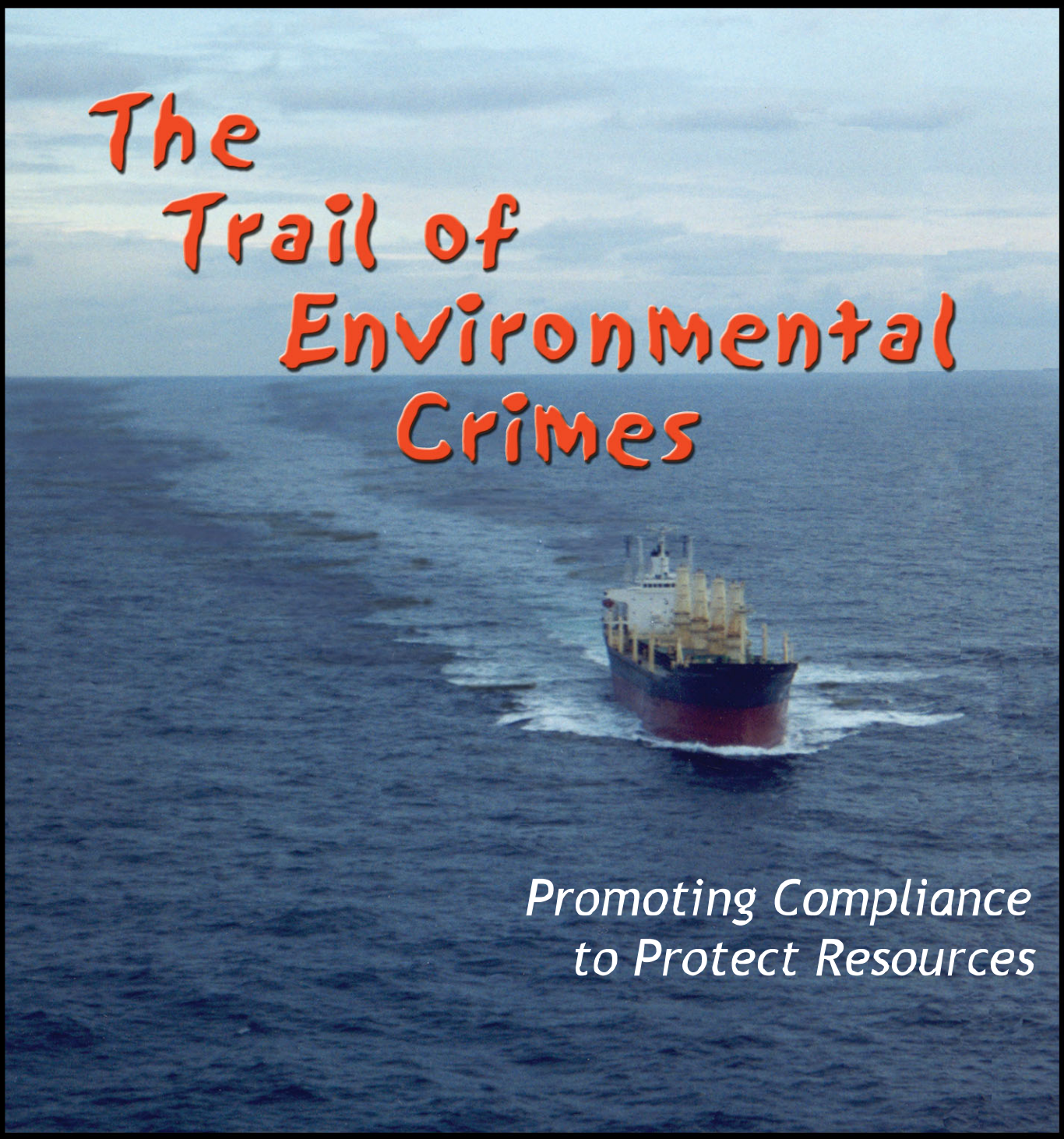
United States
Coast Guard

Winter 2004 - 2005

The Coast Guard Journal of Safety at Sea

PROCEEDINGS

of the Marine Safety & Security Council

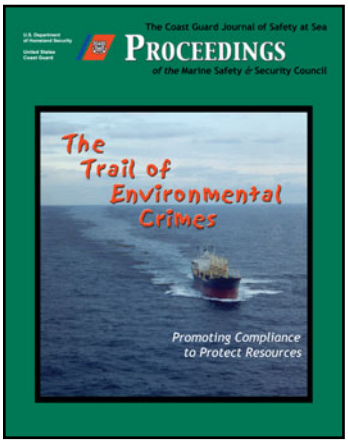


PROCEEDINGS

Winter 2004—2005

Vol. 61, Number 4

On the Cover



The operator of the *M/V Baltic Confidence* was assessed a penalty of $125,000 (Canadian) for unlawfully discharging a minimum of approximately 850 liters of an oily substance. This is the highest ever penalty issued for ship source pollution in Canadian waters.

On December 22, 1999, Transport Canada initiated an investigation after the *Baltic Confidence* was sighted by both a Canadian Coast Guard (CCG) helicopter and a private aircraft illegally discharging an oily substance approximately 85 nautical miles southwest of Halifax, Nova Scotia. The vessel was observed and photographed trailing an oily slick of more than 20 nautical miles.

The vessel, en route to Tampa, Fla., was boarded at the request of Transport Canada by U.S. Coast Guard inspectors upon its arrival on December 30, 1999. Relevant evidence, including the pollution control documents, was obtained and forwarded to Transport Canada to assist in its investigation.

The vessel was subsequently boarded by Transport Canada inspectors in Windsor, Ontario, on December 6, 2000, during its first return visit to a Canadian port. Following Transport Canada's extensive investigation, which lasted over two years and which included the cooperation of U.S., Russian, Dutch and Finnish maritime administrations, charges were laid under the Canada Shipping Act (CSA) against the owners of the vessel.

Cover photo courtesy Transport Canada Marine Safety, Atlantic Region.

6 **Environmental Enforcement Actions**
Capt. William Baumgartner, Hanna Lidington, Alex Weller, Lt. Jason Krajewski, Cmdr. Thomas Beistle, and Lt. Cmdr. Timothy Connors

11 **Tackling the Oily Water Separator Issue**
Lt. Christopher Coutu

13 **Exercise of Prosecutorial Discretion in Vessel Pollution Cases**
Gregory F. Linsin, Esq.

19 **Wastes and Machinery Space Maintenance**
Ken Olsen

22 **Environmental Crimes Case File: *Alkyon***
Andrew J. Frisch

25 **Vessel Pollution and Related Maritime Offenses, 1989-2004**
Environmental Crimes Section, U.S. Department of Justice

35 **Mystery Oil: Who Spilled It?**
Dr. Wayne R. Gronlund

41 **Improving Environmental Performance**
Ken Olsen

45 **Illegal Sewage Discharges**
Dawn Kallen

48 **Someone Will Report**
Ken Olsen

environmental CRIMES

Special to this Issue

50 **Environmental Compliance and Homeland Security**
Lt. Curtis Borland

2004 Annual Editorial Index
70 **Articles**
84 **Authors**

On Deck

4 **Assistant Commandant's Perspective**
Rear Adm. T. H. Gilmour

5 **Champion's Point of View**
Capt. Michael B. Karr

54 **PTP: Slime and Punishment**
Bill Abernathy and Diana McLaughlin

57 **Mariner's Seabag:**
U.S. Navy's Military Sealift Command
Lt. Cmdr. Joe Paitl

Nautical Queries
66 Engineering
68 Deck

Icon Credits:
All are USCG illustrations.

Copyright © 2005 USCG and its licensors.

Assistant Commandant's Perspective

by Rear Adm. T. H. Gilmour
Assistant Commandant for Marine Safety, Security & Environmental Protection

Today's Coast Guard is a multifaceted and dynamic organization. We are tasked with missions that are as diverse as search and rescue, homeland security, vessel documentation, and navigation and maritime safety. This issue of *Proceedings* highlights yet another aspect of the Coast Guard's service to our country—the discovery, documentation, and prevention of maritime environmental crimes.

Federal regulation of marine operations to prevent pollution is a vital element of our nation's effort to improve environmental quality. Federal law has prohibited the discharge of refuse, including oil, into United States' waters for nearly 100 years. In the past, the Coast Guard had limited enforcement options under the majority of environmental laws it enforced. A pollution event usually resulted in a civil penalty case being sent to a Coast Guard Hearing Officer. The enactment of the Oil Pollution Act of 1990 (OPA 90) and amendments to the Act to Prevent Pollution from Ships (APPS) increased the number and type of enforcement options available.

Today, the navigable waters and marine environment of the United States are protected by an array of federal, state, and local laws and regulations, and by several international conventions. The Coast Guard, along with the Department of Justice, Environmental Protection Agency, and Federal Bureau of Investigation, is responsible for the enforcement of these environmental laws and treaties. Environmental/pollution law enforcement cases frequently involve marine safety units, afloat units, and shore operation units, working in concert with their EPA and Department of Justice counterparts.

U.S. Coast Guard personnel actively enforce marine environmental laws by detecting, investigating, and reporting pollution events and violations of law relating to environmental protection; personnel also have pollution-response responsibilities as well. The primary role of Coast Guard field units and personnel is early detection and prompt reporting of potential violations. Coast Guard personnel are many times the first federal enforcement personnel on scene at maritime pollution events. They must know the elements of proof needed to successfully document a violation of environmental laws. Also, they must be aware of circumstances that may warrant more detailed investigation, leading to Class II or judicial civil penalties, or to criminal prosecutions.

While the vast majority of pollution cases result in civil penalty action, there are cases in which criminal prosecution is appropriate. Recent cases have demonstrated the deterrent effect that occurs when all of these agencies work together to successfully prosecute the offenders. In the last two years alone, successful maritime prosecutions have netted more than $12.2 million in fines and other levies, and offenders have been sentenced to probation periods that total over two decades.

The Coast Guard is proud to cooperate with the Department of Justice and other law enforcement agencies to effectively use its resources in support of the detection and prosecution of these environmental crimes.

T. H. Gilmour

Adm. Thomas H. Collins
Commandant
U.S. Coast Guard

The Marine Safety & Security Council *of the* United States Coast Guard

Rear Adm. John E. Crowley Jr.
Judge Advocate General
Chairman
U.S. Coast Guard

Rear Adm. T. H. Gilmour
Assistant Commandant
for Marine Safety, Security
& Environmental Protection
Member
U.S. Coast Guard

Rear Adm. Dennis Sirois
Assistant Commandant
for Operations
Member
U.S. Coast Guard

Cmdr. David L. Nichols
Executive Secretary
U.S. Coast Guard

Steven Venckus
Legal Advisor
U.S. Coast Guard

Statement of Ownership, Management and Circulation

DIST (SDL No. 134)
A: ac(2): ebfghijklmnopqrsuv(1).
B: nr(50); cefgipw(10); bklqshj(5); xdmou(2); vyz(1).
C: n(4); adek(3); blo(2); cfgijmpqr tuvwyz(1).
E: ds(5); abcefghijklmnopqrtu vwyz(1).
E: kn(2).
F: abcdehjkloqst(1)
List TCG-06

Editorial Team

Lisa H. Bastin
Executive Editor

Barbara Chiarizia
Managing Editor

Ann Aiken
Sr. Graphic Designer

Proceedings (ISSN 1547-9676) is published quarterly by the Coast Guard's Marine Safety, Security & Environmental Protection Directorate, in the interest of safety at sea under the auspices of the Marine Safety & Security Council. Special permission for republication, either in whole or in part, except for copyrighted material, is not required, provided credit is given to *Proceedings*. The views expressed are those of the authors and do not represent official Coast Guard policy.

Editorial Contact

NMCProceedings@ballston.uscg.mil

Editor, *Proceedings* Magazine
U.S. Coast Guard
National Maritime Center
4200 Wilson Blvd., Suite 730
Arlington, VA 22203-1804

Subscription Requests/Changes

Please include mailing label information when changing address.

www.uscg.mil/proceedings

ProceedingsDistribution@ballston.uscg.mil

Subscriptions, *Proceedings* Magazine
U.S. Coast Guard
National Maritime Center
4200 Wilson Blvd., Suite 730
Arlington, VA 22203-1804

View PROCEEDINGS Online at www.uscg.mil/proceedings

Champion's Point of View

by Capt. MICHAEL B. KARR
Chief, U.S. Coast Guard Office of Compliance

The Coast Guard is committed to the environmental protection of U.S. waters, coasts, and natural resources. With their passage, the Federal Water Pollution Control Act of 1972 (FWPCA), the Oil Pollution Act of 1990 (OPA 90) and the Act to Prevent Pollution from Ships (APPS) have had positive impacts on marine environmental protection. In the late 1970s, I remember frequently using oil spill cleanup funds to remove tar balls the size of footballs from east coast Florida beaches. Today, we hardly ever hear of tar balls washing up on U.S. shores!

Looking at oil spill data following OPA 90, we have seen a large decline in the number of oil spills and the quantity of oil spilled in U.S. waters. We rely on responsible operators to vigilantly carry out their tasks, including following the regulations designed to keep oil from entering the water. As part of the process to prevent oil from entering the water, the Coast Guard carries out an environmental enforcement program. We use inducements such as Qualship 21 and the William M. Benkert Award; partnerships; inspections; and a penalty process to bring about environmental compliance.

In almost all cases of an oil discharge, the Coast Guard will assess a civil penalty for the discharge of oil and any other violations related to not following regulations created to prevent the discharge. However, in a few cases each year, the Coast Guard may decide the spiller's behavior warrants a criminal investigation.

Commandant Instruction M16201.1 is a set of guidelines for Coast Guard field personnel involved in enforcing U.S. environmental laws. The Commandant Instruction serves several purposes, among them: focusing resources; fostering consistency; and encouraging compliance.

Because criminal investigations are time-consuming and intensive—often requiring extensive coordination among the Coast Guard, Department of Justice, Environmental Protection Agency, and U.S. Attorneys Office—the Coast Guard is committed to using its resources for those environmental violations that really merit such attention. According to the Commandant Instruction, the primary statutes on which Coast Guard criminal investigations should be focused are: Clean Water Act, APPS, Ocean Dumping Act, Refuse Act, and crimes under Title 18 of the U.S. Code, which include making false statements and tampering with evidence. The instruction also establishes guidelines for determining whether a specific case should be investigated, referred to the DOJ as a criminal case, or earmarked for some other civil or administrative sanction.

How are criminal cases selected? The instruction establishes that the criminal case selection process is based on two general measures: significant environmental harm and culpable conduct. Significant harm includes the presence of actual harm to the environment, or to human health and safety, as well as the threat of significant harm. Culpable conduct may be indicated at the time of case selection by several factors: a history of repeated violations; knowledge of the illegality of the conduct; the presence of deliberate misconduct; concealing misconduct, falsifying documents, tampering with monitoring devices, and providing false statements; and other related illegal activity or obstruction of justice.

The Coast Guard hopes this instruction encourages environmental compliance on the part of the maritime industry. Many win when an environmental incident is detected and cleaned up as soon as possible; everyone wins when an environmental incident is prevented altogether. By seeking criminal sanctions only in those cases meriting such attention, the Coast Guard strengthens its partnership with the maritime industry so that a few owner/operators do not gain an unfair competitive advantage over environmentally responsible parties.

Environmental Enforcement Actions

by Capt. William Baumgartner, Hanna Lidington, Alex Weller, Lt. Jason Krajewski, and Cmdr. Thomas Beistle
U.S. Coast Guard Office of Maritime and International Law

by Lt. Cmdr. Timothy Connors
U.S. Coast Guard Pacific Judge Advocate General Office

> *"The Coast Guard may make inquiries, examinations, inspections, searches, seizures, and arrests upon the high seas and waters over which the United States has jurisdiction, for the prevention, detection, and suppression of violations of laws of the United States."*
> *14 U.S.C. § 89(a).*

The Coast Guard's extraordinarily broad statutory authority and the remarkable process that combined many agencies—and missions—into what is today's Coast Guard, make us almost unique. Depending on who is looking at us, we appear to be the agency devoted to maritime search and rescue; the agency devoted to maritime safety, security, and environmental protection; or the U.S. experts on maritime drug and migrant interdiction. Notwithstanding other people's perception of us, we are, at all times, both an armed force of the United States and a law enforcement agency dedicated to enforcing all U.S. laws on the high seas and waters over which the United States has jurisdiction.

Marine environmental protection is one of the Coast Guard's most robust and vital missions. As part of that mission, the Coast Guard enforces the Federal Water Pollution Control Act[1] (FWPCA) as modified by the Oil Pollution Act (OPA) of 1990[2], the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA)[3], and the Act to Prevent Pollution From Ships (APPS)[4]. We are first responders to environmental releases and discharges; we are pollution investigators; and, ultimately, we administer a broad range of enforcement tools to ensure future compliance with environmental laws. In rare instances, we refer cases to the Department of Justice for consideration of criminal prosecution as part of that process.

The Coast Guard's broad jurisdictional reach, coupled with its many missions, means that Coast Guard working blue uniforms are recognized virtually everywhere there is a marine activity or event. On any day, when a member of the Coast Guard goes out on virtually any mission, he or she may discover evidence of, or be told about, a violation of an environmental law.

Port State Control Boarding Officers doing routine boardings may see signs that an oily water separator has been bypassed. Marine inspectors may be approached by a vessel crewmember who has witnessed an illegal overboard discharge (there are potentially substantial rewards available to the crewmember if his disclosure leads to a conviction under APPS). A pollution petty officer may discover

Criminal prosecution is generally only sought when the facts of the case show that the alleged violation involved intentional or culpably negligent conduct on the part of the responsible party.

signs of vandalism at a facility when he or she responds to a discharge or release. In every case, the problem for the Coast Guard (and the Coastie who discovers the offense) is the same—once you've secured the source, protected human health and the environment, and recovered the oil or hazardous material (if possible), what is the right way to investigate the release and decide what enforcement tool is best to use?

Resources

Fortunately, good guidance is always available. The Coast Guard's environmental protection mission is a major part of the Marine Safety, Security, and Environmental Protection Program and is supported seven days a week, 24 hours a day by the office of the Coast Guard's Judge Advocate General and the Staff Judge Advocates at area and district commands. Additionally, advice and assistance on investigating potential environmental violations is available from the Coast Guard Investigative Service (CGIS), the Environmental Protection Agency, or state law enforcement agencies.

The best resources for a Coast Guard member when a potential environmental violation has been detected are the District Staff Judge Advocate's office and COMDTINST M16247.1C, *Maritime Law Enforcement Manual,* Chapter 9.

Chapter 9 of the *Maritime Law Enforcement Manual* (MLEM) describes legal authorities for Coast Guard enforcement of marine environmental laws as well as guidelines for determining the proper level of enforcement when environmental laws are violated. The MLEM is available to Coast Guard personnel and the public at: http://www.uscg.mil/ccs/cit/cim/foia/frequently_requested_documents_i.htm.

Chapter 9 of the MLEM describes the full spectrum of potential post-investigation actions available to the Coast Guard when an environmental violation has been found. In brief, they are: 1) Notices of Violation ("NOV" or "Ticket"); 2) Class I civil penalties; 3) Class II civil penalties; 4) Judicial Civil Penalties; and 5) criminal prosecution.

The NOV is the simplest, and often the quickest, environmental enforcement tool available to the Coast Guard. The NOV process allows the Coast Guard to issue tickets under 33 C.F.R. § 1.07-11 for discharge violations of 1,000 gallons of oil or less when the discharge involves no significant gravity or culpability.[5] In these cases, parties may accept the violation, pay the amount assessed on the ticket, and settle the case. Hearings are not allowed in the NOV process; however, if the responsible party declines the NOV, the case is processed as a Class I civil penalty.

Class I FWPCA and APPS civil penalties are meant to encourage violators to comply with environmental laws in the future through warnings or relatively modest monetary penalties. Class I civil penalties are assessed using the Coast Guard's Hearing Officer Program and are processed in accordance with the procedures described in 33 C.F.R. Part 1.07. This is the most common method of Coast Guard environmental enforcement. For FWPCA violations, monetary penalties are limited to $10,000 per violation or a total penalty, per incident, of up to $25,000.[6] For APPS violations, the Coast Guard may assess Class I civil penalties of not more than $25,000 per pollution violation or penalties of not more than $5,000 for fraudulent statements made under the requirements of APPS; in either case, each day of a continuing violation constitutes a separate violation and there is no limit as to the total amount that may be assessed for particular incidents.[7]

In more severe FWPCA cases, the Coast Guard may elect to pursue a Class II civil penalty. Class II civil penalties are assessed after formal hearings, taken on the record, before Coast Guard Administrative Law Judges (ALJs) in accordance with the procedures set forth in 33 C.F.R. Part 20. Like other civil penalties, Class II civil penalties are meant to encourage future compliance, but substantially greater monetary penalties—either $10,000 per day of a continuing violation or a maximum penalty of up to $125,000[8]—may be assessed by the ALJ.

Prevention through partnership and cooperation with industry is the Coast Guard's most often used, most effective, and most cost-efficient tool for protecting the environment and achieving the goal of compliance.

Certain marine environmental law violations may justify pursuing judicial civil penalties. Judicial civil penalties are typically sought when the evidence

available in a pollution case does not meet the burden of proof necessary for a criminal charge, but, nonetheless, shows that the violation was egregious enough to warrant the assessment of a penalty in excess of the maximum amount allowed in a Class II case, or where an injunction is needed. They also may be used when there is a widespread pattern of violations. These cases are brought in federal district court, before federal judges, and penalties are assessed via formal court proceedings, under the procedural rules of the court. Under the FWPCA, judicial civil penalties may be assessed by a federal district court in the following amounts: $25,000 per discharge or $1,000 per barrel of oil or hazardous material discharged; for failure to remove or comply, $25,000 per day of violation or an amount up to three times the costs incurred by the Oil Spill Liability Trust Fund for removal; for failure to comply with the regulations implementing the Clean Water Act, an amount of up to $25,000 per day of a violation; and, in cases involving gross negligence, a penalty of not less than $100,000 per incident and not more than $3,000 per barrel of oil or hazardous material discharged.[9]

In the most egregious cases, the Coast Guard may elect to pursue criminal prosecution of violators of marine pollution laws. Criminal prosecution is generally only sought when the facts of the case show that the alleged violation involved intentional or culpably negligent conduct on the part of the responsible party. Criminal enforcement cases may result in severe penalties and require that the Coast Guard prove each element of the offense beyond a reasonable doubt. Criminal cases are referred to U.S. Attorneys or the Environmental Crimes Section of the Department of Justice for trial in Federal District Court, where strict rules of evidence apply. Under 33 C.F.R. § 1.07-90, the authority for referral of criminal prosecution rests with the district commander. Though rarely used, criminal enforcement is arguably the largest hammer in the Coast Guard's marine environmental enforcement tool chest.

Enforcement Philosophy

Every set of circumstances, every potential offense, and every potential environmental law violator is different. There is no ready-made matrix for enforcement, and good judgment will always be an important part of our enforcement strategy. Congress gave clear guidance on what should be considered when a court, a hearing officer, or an administrative law judge considers the appropriate level for any civil penalty:

Determination of amount

In determining the amount of a civil penalty. . . the Administrator, Secretary, or the court, as the case may be, shall consider the seriousness of the violation or violations, the economic benefit to the violator, if any, resulting from the violation, the degree of culpability involved, any other penalty for the same incident, any history of prior violations, the nature, extent, and degree of success of any efforts of the violator to minimize or mitigate the effects of the discharge, the economic impact of the penalty on the violator, and any other matters as justice may require. 33 U.S.C. § 1321(b)(8)

As you can see, Congress was concerned not only with ensuring that a violator did not benefit economically from his crime, but also that an inadvertent violator's good conduct would be given consideration if he responded to his spill with determined efforts to remediate the harm. This concept of creating a level playing field is embedded in the Coast Guard's enforcement policy.

One way the Coast Guard uses this wide array of enforcement options is to look at the Coast Guard's overall objective—stopping pollution of the marine environment. Enforcement options are tools to achieve this goal. For any given situation, the Coast Guard chooses the most effective tool. Not surprisingly, prevention through partnership and cooperation with industry is the Coast Guard's most often used, most effective, and most cost-efficient tool for protecting the environment and achieving the goal of compliance. However, prevention does not always work and remedial tools are sometimes necessary. Tools that can be brought to bear quickly, like NOVs, Class I and II civil penalties, or warnings are the most appropriate—and cost-effective—tools for the vast majority of situations where vessels or facilities are making reasonable efforts to comply with laws and regulations, but come up short.

On the other hand, judicial civil penalties or criminal sanctions may be appropriate for serious repeat or intentional offenders and other situations in which the impact of those tools is necessary. These high-end tools are expensive for the government and are used only when that increased expense makes sense. In addition, indiscriminate use of criminal prosecutions for minor cases could unintentionally hurt cooperation with industry and undermine the Coast Guard's overall objectives. Keeping this objective in mind, Coast Guard Captains of the Port and District Commanders maintain an active role in every case

throughout its life to ensure that the correct enforcement options are chosen.

For the same reasons, District Staff Judge Advocates should be consulted early in the investigative process to provide timely analysis of the sufficiency of the evidence available to the Coast Guard and the advisability of engaging other offices and agencies to assist in an investigation. In a pollution case—or any other type of enforcement case, for that matter—the Staff Judge Advocate can make a quick call to the U.S. Attorney's Office or to the local CGIS office to secure investigatory assistance. Equally important, the Staff Judge Advocate can help assess the quality of the evidence collected to guide additional investigative work.

The Coast Guard's authority to search vessels and seize evidence is very different from that of traditional land-based law enforcement agencies.

In sum, Staff Judge Advocates, Captains of the Port, district commanders, and district staffs do not get credit for prosecutions, penalties, or tickets. Their overriding goal is always the same—stopping pollution of the marine environment—and they will tailor their enforcement efforts to achieve that goal.

Investigative Authority

Questions about the Coast Guard's authority to investigate potential environmental crimes usually come up in the context of vessel searches. The Coast Guard's authority to search vessels and seize evidence is very different from that of traditional land-based law enforcement agencies. Courts have interpreted 14 U.S.C.§ 89(a) to permit the Coast Guard to conduct administrative and regulatory searches of vessels—including port state control boardings and marine inspections—without first obtaining warrants.[10] Furthermore, even in cases where the courts have applied the 4th Amendment's warrant requirement to vessels, the courts have found, based on the inherent mobility of vessels, that exigent circumstances are present and justify an exception to 4th Amendment's warrant requirement.[11]

For example, in *United States v. Boynes*, 149 F.3d 208 (3d. Cir. 1998), two Coast Guard officers boarded a docked vessel without a warrant, inspected the engine room, and found 50 gallons of oil on the deck as well as a diesel oil leak in a fuel line. In a criminal prosecution for knowing discharge of oil in U.S. waters, the court held that samples of the oil taken from the discharge fitting and from the sheen of the vessel's wake during a warrantless search were admissible because the inherent mobility of the vessel (even when docked) presented a risk of flight, creating exigent circumstances justifying the actions of the Coast Guard officers.[12] Similarly, in *United States v. Varlack Ventures, Inc.*, 149 F.3d 212 (3d. Cir. 1998), Coast Guard officers spotted a rainbow sheen of oil on the water surrounding a vessel, later boarded the vessel for a regulatory inspection, and discovered significant oily water separator operating regulation violations. The court admitted this evidence on the basis of probable cause combined with the exigent circumstance of the ship's mobility.

Conclusion

As you can see, the Coast Guard has a broad array of enforcement tools at its disposal when an environmental law has been violated. What's more, useful guides are available to help the Coast Guard decide which enforcement tool should be used. The key to resolution of a case, however, is not the tools, but, instead, is common sense and clear thinking. Every member of the chain of command has a vital decision-making role in this process; the pollution petty officer who first detects an act of vandalism must be able to recognize it for what it is and decide to act early to collect evidence quickly. The command can improve the chances of a case being positively resolved by deciding quickly whether other resources should be contacted, like the Staff Judge Advocate, CGIS, the U.S. Attorney's Office, or other investigative agencies. The Staff Judge Advocate can help a unit assess the quality and quantity of evidence and recommend additional areas of investigation. And, depending on the circumstances, the Staff Judge Advocate can be an impartial weigher of facts recommending the appropriate enforcement tool to use.

Finally, the district Marine Safety Officer and Staff Judge Advocate, as advisors to the district commander, can recommend a course of action, including referral to a U.S. Attorney's office or the Environmental Crimes Section of the Department of Justice for prosecution if the evidence and surrounding facts support such an action. As you will see in Mr. Gregory Linsin's article, if a district commander does refer a case for criminal prosecution,

an additional layer of in-depth analysis will be applied according to Department of Justice guidelines to further evaluate a case's merit before a criminal prosecution is initiated. As you can imagine, early and robust communications in the chain of command are key to good decision-making.

In a 1999 letter from Admiral Loy to Senator John Breaux, Admiral Loy said,

> "In spite of this overall success in better protecting our marine environment, not everyone agrees with the enforcement alternatives that currently exist, especially those involving criminal sanctions. The Coast Guard's policy and record on environmental enforcement is very clear. The Coast Guard has consistently stated that criminal prosecution of environmental crimes is reserved for only the most egregious cases, where evidence of willful misconduct, culpable negligence, failure to report a spill, or attempts to falsify records, is considered with significant harm to the environment or the threat of such harm. Policy guidance issued to Coast Guard field units in 1997 stresses these themes, and statistics on our criminal enforcement activities both before and after the guidance was issued indicate the policy issuance was primarily clarifying and did not induce a change in the number of cases prosecuted."

As you will see when you examine the MLEM, Chapter 9, Coast Guard policy on environmental enforcement actions has not changed since Admiral Loy wrote his letter to Senator Breaux, and it is not likely to change in the future. The U.S. government's overarching goal of protecting the environment is supported by Coast Guard policy and procedure for collecting and reviewing evidence, considering the conduct of a spiller, both before and after a spill, and choosing the right tool, from a wide range of tools, best suited to achieving that goal.

Endnotes

[1] Also known as the Clean Water Act, 33 U.S.C. § 1301 et seq.
[2] Oil Pollution Act of 1990, Pub. L. No. 101-380, 104 Stat. 484.
[3] 42 U.S.C. § 9603.
[4] 33 U.S.C. §§ 1901-1912.
[5] NOVs can also be issued for violations of certain other environmental regulations.
[6] 33 U.S.C. § 1321(b)(6)(B)(i); See also 68 Fed. Reg. 74,189-01 (2003), amending 33 C.F.R. § 27.3 to reflect inflation adjustments to penalty amounts. The Final Rule, effective January 22, 2004, adjusted penalties for violations of 33 U.S.C. § 1321(b)(6)(B)(i) to $11,000, per violation, or a maximum penalty per incident of up to $32,500.
[7] 33 U.S.C. §§ 1908 (b)(1) and (2); See also 68 Fed. Reg. 74,189-01 (2003), amending 33 C.F.R. § 27.3 to reflect inflation adjustments to penalty amounts. The Final Rule, effective January 22, 2004, adjusted penalties for violations of 33 U.S.C. § 1908(b)(1) to $32,500 per violation and amended 33 U.S.C. § 1908(b)(2) to $6,500 per false statement.
[8] See 33 U.S.C. § 1321(b)(6)(B)(ii). See also 68 Fed. Reg. 74,189-01 (2003), amending 33 C.F.R. § 27.3 to reflect inflation adjustments to penalty amounts. The Final Rule, effective January 22, 2004, adjusted penalties for violations of 33 U.S.C. § 1321(b)(6)(B)(ii) to $11,000, per violation, or a maximum penalty per incident of up to $157,500.
[9] See 33 U.S.C. §§ 1321(b)(7)(A)-(C). See also 68 Fed. Reg. 74,189-01 (2003), amending 33 C.F.R. § 27.3 to reflect inflation adjustments to penalty amounts. The Final Rule, effective January 22, 2004, adjusted penalties for violations of 33 U.S.C. § 1321(b)(7)(A)-(C) to: $32,500 per discharge or $1,100 per barrel discharged; for failure to remove or comply $32,500 per day of violation; for failure to comply with the regulations implementing the Clean Water Act $32,500; and, for cases involving gross negligence, a penalty of not less than $100,000 per incident or more than $3,300 per barrel of oil/hazardous material discharged.
[10] See *United States v. Varlack Ventures, Inc.*, 149 F.3d 212 (1998); *United States v. Boynes*, 149 F.3d 208 (1998) (Coast Guard officers were justified by exigent circumstances in conducting a warrantless search of the *Mona Queen* because of the risk of flight posed by the vessel's mobility, although it was docked); *United States v. Lingenfelter*, 997 F.2d 632, 640-41 (9th Cir. 1993) (a boat in dry-dock could be seized by virtue of the automobile exception since the boat could be returned to the water and then flee).
[11] See *United States v. Bain*, 736 F.2d 1480, 1488 (11th Cir. 1984) ("mobility of the [docked] vessel was an exigent circumstance justifying an immediate search"); *United States v. Weinrich*, 586 F.2d 481, 492-93 (5th Cir. 1978) (the "automobile exception" justifies not requiring a warrant for searches of ships).
[12] See supra note 5.

Tackling the Oily Water Separator Issue

by Lt. Christopher Coutu
First U.S. Coast Guard District

Tanker and motor vessels are everywhere along the U.S. coast. They are a starting point of our economy, providing goods and a stream of commerce into and out of the country. But with all the good that vessels bring, comes a set of challenges that the Coast Guard must answer. One such challenge is the potential environmental harm that lurks in the bilges of each vessel. The drone of their diesel engines and complex systems produce a steady supply of waste oil, dripping, collecting, and mixing with the water below, thereby creating an oily wastewater cocktail. It is a huge source of potential pollution that often causes operational headaches for the vessels that produce it.

The oily wastes accumulate in the bilges and are pumped into holding tanks on the vessel. A vessel then has two options on how to deal with the oily water; either retain it onboard and discharge it to an onshore facility when it reaches port, or the vessel may route the wastes through an oily water separator (OWS). An OWS separates the oil from the bilge water, reducing the concentration of oil to 15 parts per million (ppm) or less. Once the wastewater reaches a concentration of 15 ppm or less (without dilution), the vessel may discharge the wastewater overboard.

The Law

The Federal Water Pollution Control Act, also known as the Clean Water Act, seeks to prevent all discharges of oil, among other pollutants, into the waters of the United States. However, the Clean Water Act, as amended by the Oil Pollution Act of 1990, contains an exception for vessels allowing overboard discharges that are otherwise authorized under MARPOL. MARPOL is the common name for the International Convention for the Prevention of Pollution from Ships. That treaty allows vessels to discharge wastewater containing oil at low concentrations. The Act to Prevent Pollution from Ships, commonly referred to by its acronym, APPS, implements MARPOL in the United States. APPS, found at 33 United States Code, Sections 1901 to 1915, authorizes the Secretary (whomever the Coast Guard is operating under) to enforce MARPOL. Under APPS, it is a crime to knowingly violate MARPOL or the series of regulations promulgated under it (33 CFR 151, *et sec.*). APPS, in accordance with MARPOL, allows vessels to discharge oily wastewater, but sets the legal standard for the maximum oil concentration at 15 ppm.

In theory, all of a vessel's discharges of wastewater should not have a concentration of oil greater than 15 ppm. However, OWS systems do not always work as designed and/or are not properly maintained.

The Crime

In theory, all of a vessel's discharges of wastewater should not have a concentration of oil greater than 15 ppm. However, OWS systems do not always work as designed and/or are not properly maintained. Whatever the reason, rather than holding onto the waste and disposing of it all onshore,

which can be costly, ship personnel sometimes circumvent the OWS by way of a pipe fitted to discharge oily waste directly overboard—thereby depositing the material directly into the sea, without separation, at oil concentrations likely over 15 ppm.

Under MARPOL and its implementing regulations promulgated under APPS, each oil tanker of 150 gross tons or more or non-tanker vessel of more than 400 gross tons must maintain a record known as an oil record book (ORB). Entries must be made in the ORB for certain engine room operations, including the disposal of oil residue or the discharge overboard or disposal otherwise of bilge water that has accumulated in machinery spaces. All accidental, emergency, or other exceptional discharges of bilge waste or oil must be recorded in the ORB, along with the reason for the discharge. Each of these engine room operations, including the overboard discharge of bilge waste, is required to be "fully recorded without delay in the oil record book." 33 C.F.R. § 151.25(h). Hence, the vessel's oil record book serves as the onboard accountant of these discharges. Whether the discharge is made onshore or overboard, it must be recorded in the ORB. Most often, to conceal illegally discharged oily waste, ships' personnel falsify the ORB to give the impression that the OWS is working properly and that no illegal discharges have taken place.

The Coast Guard is charged with enforcing the laws of the United States and is empowered under 14 U.S.C. Section 89(a) to board ships and conduct regular inspections and investigations of potential violations, including violations of MARPOL. As part of their compliance inspection, Coast Guard investigators examine the ORB. A falsified record book seeks to mislead the investigator and prevent the Coast Guard from identifying an illegal discharge and ultimately a potential source of pollution.

The Punishment

As a result, the United States often prosecutes these cases under 18 United States Code, Section 1001, which makes it a crime to make materially false statements and representations and to make and use materially false writings and documents, in a matter within the jurisdiction of an agency of the United States. That statute allows the United States to seek a fine and/or imprisonment for no more than five years. The fines, as governed by the Alternative Fines Act, 18 USC 3571, authorize $250,000 per count for individuals for felonies and $500,000 per count for organizations (including owners and/or operators of vessels) for felonies. Additionally, under APPS at 33 U.S.C. § 1908(a), a knowing violation of MARPOL is also a crime. It is a Class D felony for any person who knowingly violates MARPOL and its corresponding regulations.

The Coast Guard works closely with U.S. Attorney's Offices and the Department of Justice to facilitate criminal prosecutions. However, the Coast Guard may seek civil penalties on its own for such violations as well. Under APPS, the Coast Guard may charge a $25,000 civil penalty for each violation of MARPOL. APPS also authorizes a $5,000 civil penalty for each false statement or representation made to the Coast Guard in any matter in which a statement or representation is required to be made, such as ORB entries.

There are a variety of legal tools available to prosecute these cases. Whether it is a criminal or civil penalty, however, ensuring that vessels and their crew are operating truthfully and within the realm of the MARPOL framework is of utmost importance. Falsifying the ORB undermines MARPOL and puts the United States' waters at risk. Ultimately, keeping oil and other pollutants out of the water is the goal of MARPOL. Prosecution of OWS cases is a key piece of the overall enforcement puzzle that helps realize the goals of MARPOL.

Rather than holding onto the waste and disposing of it all onshore, which can be costly, ship personnel sometimes circumvent the OWS by way of a pipe fitted to discharge oily waste directly overboard—thereby depositing the material directly into the sea.

Exercise of Prosecutorial Discretion in Vessel Pollution Cases

Debunking the myth of the reckless prosecutor criminalizing innocent behavior.

by Gregory F. Linsin, Esq.
Special Litigation Counsel, Environmental Crimes Section, Department of Justice

One of the more persistent myths regarding criminal vessel pollution enforcement in the United States concerns the renegade prosecutor who casually files criminal charges against vessel owners or operators—and possibly senior shipboard officers as well—with the effect of criminalizing innocent or, at worst, inadvertent behavior. The purveyors of this myth either do not understand or simply choose to ignore the careful analysis and complex review processes to which the charging decisions in vessel pollution cases are routinely subjected.

The truth is that one of the most critical decisions confronting a public prosecutor is the determination of whether a particular case will be accepted for criminal prosecution or declined for evidentiary, legal, or policy considerations. For prosecutors with the U. S. Department of Justice, this exercise of prosecutorial discretion is governed by several departmental policy statements that carefully guide the decision-making process. There are several additional factors that also affect a prosecutor's decision whether to accept or decline a vessel pollution case for criminal prosecution. The purpose of this article is to discuss the policies that govern the exercise of prosecutorial discretion for federal prosecutors generally and to identify those additional factors that relate more specifically to vessel pollution cases. It is hoped that a more thorough understanding of this case selection process will benefit vessel owners and operators, individual mariners, and the broader commercial maritime industry.

Any decision regarding the commencement or declination of a federal criminal case by a Department of Justice prosecutor is governed initially by the provisions of the Principles of Federal Prosecution. The threshold requirement for an evaluation of whether Federal prosecution may be warranted is whether the prosecutor finds there is probable cause to believe that a person has committed a Federal offense in the relevant jurisdiction.

Principles of Federal Prosecution

The initial case referral in a vessel pollution case is likely to be made to the Department of Justice by a component of the U. S. Coast Guard. The case referral also initiates a process of dialogue and consultation involving the prosecutor, the District Staff Judge Advocate, and Coast Guard field personnel that continues throughout the duration of the case. Any decision regarding the commencement or declination of a federal criminal case by a Department of Justice prosecutor is governed initially by the provisions of the Principles of Federal Prosecution.[1] The threshold requirement for an evaluation of whether Federal prosecution may be warranted is whether the prosecutor finds there is probable cause to believe that a person has committed a Federal offense in the relevant jurisdiction. If that initial standard is met, the prosecutor must then evaluate several additional factors, including the possibility of a referral to another jurisdiction and the potential of a non-criminal disposition, to determine whether further investigation of that case is warranted in that jurisdiction at that time.[2]

If the decision is made to investigate the matter further, all of the relevant evidence must be collected and analyzed. The prosecutor must then consider the complete investigative record and determine whether the conduct at issue constitutes a Federal offense and whether the admissible evidence is "sufficient to obtain and sustain a conviction . . . ."[3] This requires the prosecutor to evaluate the evidentiary quality of the evidence, to determine whether the quantum of proof is sufficient to establish each of the elements of the offense beyond a reasonable doubt, and to consider whether, in the event a conviction is obtained, it can be sustained before an appellate court.

Even if the prosecutor determines that this substantial evidentiary burden has been satisfied, the departmental policy requires the prosecutor to consider whether the prosecution should be declined because: no substantial Federal interest would be served by prosecution; the target of the investigation is subject to effective prosecution in another jurisdiction; or there exists an adequate non-criminal alternative to prosecution.[4] The assessment of the Federal interest in a potential prosecution requires consideration of the nature and seriousness of the offense, the prospective defendant's relative culpability, prior criminal history, and the extent of cooperation in the investigation.[5] The potential for effective prosecution in another jurisdiction is a particularly relevant factor in vessel cases, because other coastal districts may have initiated related investigations involving the same vessel owner or operator.[6] The potential effectiveness of non-criminal alternatives to prosecution is routinely considered in vessel pollution cases, both with respect to organizational defendants and to shipboard personnel.[7] Each of these potential bases for declination must be judged carefully before a decision can be made to commence a criminal prosecution.

Voluntary Disclosure Policy

In addition to the questions regarding the sufficiency of the evidence and the availability of alternative enforcement options, Federal prosecutors of environmental cases are required to consider several additional factors concerning the nature and extent of cooperation demonstrated by the subject of the investigation. In 1991, the Environment and Natural Resources Division of the Department of Justice issued a policy statement regarding the manner in which significant voluntary compliance or disclosure efforts by an environmental violator will be considered in evaluating the appropriateness of criminal prosecution.[8] This policy governs the treatment of voluntary compliance or disclosure efforts in all environmental cases, not just vessel pollution cases. The policy requires the environmental prosecutor to consider several factors to determine whether the degree of cooperation warrants mitigation of enforcement actions.

One such factor is whether the subject made a voluntary, timely and complete disclosure of the matter under investigation, with particular attention to whether the disclosure occurred before regulatory or law enforcement officials had already obtained knowledge of the noncompliance. Another factor is the extent of cooperation demonstrated by the entity under investigation, including the extent and quality of the organization's assistance to the investigation. The voluntary disclosure policy also stresses that the prosecutor should consider the existence and scope of any preexisting environmental compliance program and evaluate whether the adoption and implementation of that program demonstrated a strong institutional commitment to environmental compliance. Finally, this policy identifies several additional factors that may be relevant to the issue of mitigation, including the pervasiveness of the noncompliance, the existence and use of effective internal disciplinary procedures, and the extent of any effort to remedy any ongoing noncompliance.

The application and effect of the voluntary disclo-

sure policy will depend on facts and circumstances of each particular case. However, the potential mitigation factors enunciated in the policy are evaluated in every environmental case that is considered for criminal enforcement. The record of Federal environmental criminal enforcement in the United States, specifically including vessel pollution cases, contains numerous cases where the application of this voluntary disclosure policy has resulted in either a declination of criminal enforcement or a significant mitigation in the nature of the enforcement action filed and a substantial concession with respect to the amount of the criminal fine imposed.

Principles of Federal Prosecution of Business Organizations

Over the years, certain components of the Department of Justice have issued various policy statements to guide Federal prosecutors in their exercise of prosecutorial discretion with respect to the filing of criminal charges against business organizations. In January 2003, the Office of the Deputy Attorney General issued a revised set of principles regarding the prosecution of business organizations ("the Thompson Memorandum"), with an increased emphasis on and scrutiny of the authenticity of a corporation's cooperation.[9] Although the principles discussed in the Thompson Memorandum apply broadly to all departmental components, many have direct applicability to the specific charging issues presented in vessel pollution cases. In addition, the Thompson Memorandum constitutes an updated treatment of relevant factors and principles, some of which are also contained in the general Principles of Federal Prosecution and the Environment Division's voluntary disclosure policy. As such, the Thompson Memorandum represents the most current treatment of these issues in the context of criminal enforcement against corporations. Finally, the promulgation and discussion of these principles underscores the fact that these issues are actively evaluated by prosecutors in all components of the Department of Justice as they consider whether to initiate a criminal prosecution of any business organization.

General Principles

The Thompson Memorandum clarifies that a corporation should not be treated more leniently or more harshly because of its artificial nature.[10] The decision to charge a corporation in an appropriate case may result in immediate remedial steps within an industry and may enhance the overall deterrent effect of the prosecution. Moreover, crimes that carry with them a more substantial risk of public harm, including environmental crimes, are more likely to be committed by businesses and "there may, therefore, be a substantial federal interest in indicting the corporation."[11]

The policy guidance emphasizes that a decision to charge a corporation should not be viewed as a substitute for the prosecution of criminally culpable individuals. There must be a principled evaluation of the appropriateness of charging the business organization and any criminally responsible employees, recognizing that, at times, employees may engage in criminal conduct solely to advance their personal interests. In the latter case, it may not be appropriate to pursue criminal charges against the business organization. However, even where the misconduct is relatively minor in nature, if the wrongdoing was pervasive, it may be appropriate to pursue charges against the corporation. The most important factor in differentiating between such cases is a critical evaluation of the role of management and a recognition that it is a corporation's management that is responsible for the corporate culture in which criminal conduct is either discouraged or tacitly encouraged.[12]

In the context of vessel pollution investigation, this guidance requires the prosecutor to look beyond the wrongful conduct that may have occurred aboard a specific vessel and consider the actions or the inaction of the shore-side management of the company with respect to the conduct in question.

Cooperation and Voluntary Disclosure

The Thompson Memorandum also stresses the importance of evaluating a corporation's timely and voluntary disclosure of information and its willingness to cooperate with the government's investigation.[13] Factors that may properly be considered in gauging the extent of cooperation is a corporation's willingness to: identify the individuals responsible for the wrongdoing; make witnesses available; disclose the complete results of internal investigations or audits; and waive attorney-client and work product protection.

Depending upon the facts of the case, the dynamics of the investigation, and the extent of the corporation's cooperation, it may be possible to consider a grant of immunity or pretrial diversion to the corporation. However, in the context of a vessel pollution investigation, before a decision is made to enter into such a non-prosecution agreement with a ves-

sel owner or operator, it will likely be necessary for the prosecutor to consult with other coastal districts and with the Environmental Crimes Section to determine what, if any, effect such a disposition may have on other related investigations.

Another important factor to be weighed in assessing the nature of a corporation's cooperation is whether, under the guise of cooperation, a corporation is taking steps that have the effect of protecting culpable employees or otherwise frustrating the government's investigation.[14] In making this assessment, the prosecutor is cautioned to evaluate whether the corporation's advancement of attorney's fees, its retention of culpable employees without sanction for their misconduct, and its provision of information to culpable employees about the nature of the government's investigation pursuant to a joint defense agreement are indicia of true cooperation. Additionally, overly broad assertions of corporate representation of employees (e.g., a declaration by corporate counsel that he represents the corporation as well as all licensed and unlicensed crewmembers), directions to employees not to cooperate with the investigation, or the submission of misleading or incomplete information to the government may properly be understood as conduct that is designed to impede rather than to assist the investigation.

The myth of the renegade prosecutor recklessly filing criminal charges against innocent vessel operators and mariners may serve the interests of those persons who seek to perpetuate it—but it bears no relation to the actual process whereby prosecutorial discretion is exercised in this important area of environmental enforcement.

Corporate Compliance Programs

As with other guidance documents, the Thompson Memorandum emphasizes the potential importance of a meaningful compliance program in evaluating whether the corporation should be subjected to criminal enforcement.[15] The mere presence of a "paper program" does not insulate the business organization from criminal enforcement. The prosecutor must evaluate whether the program was designed and implemented in an effective manner.

For example, pursuant to the requirements of the International Safety Management Code, most commercial vessels now have a Safety Management System (SMS) manual on board setting forth policies and procedures that are, on their face, designed to ensure that the vessel is operated in compliance with the International Convention for the Prevention of Pollution from Ships (MARPOL), International Convention for the Safety of Life at Sea (SOLAS), and other applicable international maritime conventions. The more significant question, though, is whether the SMS manual has actual relevance to the day-to-day operation of the vessel and to the shore-side management and oversight of the vessel.

Vessel owners and operators will frequently argue that the existence of the SMS manual on board the vessel demonstrates the corporation's good faith effort to ensure compliance with the environmental statutes, and that, if environmental statutes were violated, it was simply the act of rogue employees acting in violation of express company policy. The prosecutor must look behind the "paper program" and consider what concrete steps the shore-side management has taken to ensure compliance with the enunciated policy.

Shore-side vessel managers routinely monitor a range of operational parameters while the ship is underway, including vessel location and navigation, vessel speed, fuel consumption rates, machinery maintenance, and cargo operations. When evidence of environmental violations involving the same vessel is detected by Coast Guard inspectors, it is reasonable to inquire whether the vessel's shore-side managers expended the same level of energy on a systematic basis to ensure that the vessel was operating in compliance with the requirements of MARPOL. This inquiry is especially relevant when the evidence of non-compliance is as flagrant as an inoperable oil water separator, a bypass system circumventing the ship's pollution prevention equipment, fresh oil in the ship's overboard discharge valve, or substantial disparities

between the ship's sounding logs and the machinery space oil record book.

Additional Factors Applicable to Vessel Cases

Vessel pollution investigations present a number of additional elements that directly impact the prosecutor's exercise of prosecutorial discretion. One of the more obvious factors that is unique to vessel pollution investigations is the mobility of the vessel and its crew and the resulting time pressures this creates with respect to the conduct of an investigation. This timing factor places a high premium on early and intensive consultation among Coast Guard field personnel, the Coast Guard's District Legal Office and the Federal prosecutor. The goal of such early consultations is to ensure a reasonable assessment of the potential violations at issue and, if there is an initial determination that the matter warrants further scrutiny, the securing of critical documentary evidence, the collection of necessary physical evidence, and the identification of crewmembers who may have directed the illegal activity or who have been eyewitnesses to the violations. If the initial investigation indicates a likelihood of criminal prosecution, there may also be a need to obtain a surety bond from the vessel owner or operator.[16]

The backdrop to any such investigative effort, however, is the recognition that these legitimate law enforcement objectives must be met in a manner that is minimally disruptive to the vessel's schedule. Additionally, if it is necessary to secure statements or testimony from individual crewmembers, extraordinary measures may be required to accelerate the timing of the standard investigative procedures to minimize the disruption of the crewmembers' schedules. In this regard, the extent of early cooperation by the vessel's owner or operator can have a very tangible impact on the course of the investigation and the extent of the disruption to the vessel and its crew.

Another question that often surfaces in vessel pollution cases is whether the wrongful conduct that is uncovered with respect to the operation of one ship may also have occurred aboard other ships within the fleet. This issue often arises logically from the initial investigation when one crewmember will report that the same or similar illegal activity occurred on another ship on which the crewmember previously served. If sufficient credible evidence is developed to indicate that there may be a multi-ship or fleet-wide environmental compliance problem, the Federal prosecutor has an obligation to evaluate the nature and extent of those violations, at least to the extent the United States might have jurisdiction to enforce against the violations.

Vessel cases also require early consultation and coordination among the various coastal judicial districts that may be affected by the unlawful activity in question. Communication networks have been established among the coastal United States Attorneys' Offices, the Environmental Crimes Section, and the cognizant Coast Guard offices to ensure that information regarding pending vessel pollution investigations and the leads developed by such investigations can be shared in a timely manner with interested jurisdictions. This coordination continues throughout the pendency of the investigation to ensure that significant prosecutive decisions, including declinations, immunizations, and charging decisions, are made in a consistent manner and are based upon all of the available evidence.

As the vessel pollution enforcement program in the United States matures, real-time consultations among Port States regarding specific investigations of mutual interest are also increasing, and this process is yielding significant enforcement benefits.

Consultation and Review

A prosecutor who is supervising a vessel pollution investigation is required to consider and weigh each of the principles and factors outlined above in exercising prosecutorial discretion to recommend the filing of criminal charges. The prosecutor must also weigh heavily the recommendation of the District Commander of the Coast Guard with respect to the initiation of a criminal enforcement action. However, the decision to file Federal criminal charges, including any such decision in a vessel pollution case, is not a solitary decision made by a line prosecutor. Although the specific procedures vary from office to office, every component of the Department of Justice has a mechanism for ensuring supervisory review and authorization before a criminal case can be initiated. This process of consultation and review is designed to ensure that the recommendations of the line prosecutor are scrutinized and evaluated by independent supervisory personnel within the office and to guarantee that the ultimate exercise of prosecutorial discretion is an expression of collective professional judgment.

The myth of the renegade prosecutor recklessly filing criminal charges against innocent vessel operators and mariners may serve the interests of those persons who seek to perpetuate it—but it bears no

relation to the actual process whereby prosecutorial discretion is exercised in this important area of environmental enforcement.

Conclusion

The U.S. Coast Guard and the Department of Justice are eager to work constructively with the responsible members of the commercial maritime industry to achieve the common goal of enhanced compliance with MARPOL without resort to criminal prosecution. It is for this reason that the vast majority of environmental deficiencies or violations identified by Coast Guard inspectors are resolved without consideration of a potential referral to the Department of Justice. Moreover, any case that is referred to the Department of Justice by the Coast Guard for consideration of criminal enforcement is subjected to a rigorous review and analysis based upon the principles and factors discussed above. In fact, many cases referred to the Department of Justice are declined for criminal enforcement either because the evidence is found to be insufficient to establish a violation or because a non-criminal alternative was determined to be a more appropriate resolution.

However, when the Coast Guard uncovers evidence of flagrant, intentional violations of MARPOL, including bypass systems designed to circumvent the ship's pollution prevention equipment, the falsification of official ship's records in an effort to conceal such violations, or other intentional actions designed to obstruct the Coast Guard's Port State Control inspection, the Department of Justice will carefully consider pursuing a criminal enforcement action. This is both to address the specific wrongful conduct aboard that vessel and to deter other unscrupulous vessel owners or operators who may be tempted to engage in similar criminal conduct that is detrimental to the marine environment.

Endnotes

[1] United States Attorneys Manual ("USAM"), § 9-27.000, et seq. http://www.usdoj.gov/usao/eousa/foia_reading_room/usam/title9/27mcrm.htm

[2] USAM, § 9-27.200.

[3] USAM § 9-27-220.

[4] Ibid.

[5] USAM, § 9-27.230. These factors are similar to those incorporated in the Commandant's Instruction M16201.1 on Criminal Enforcement of Environmental Laws, Chap. 1.E.3.

[6] USAM, § 9-27.240. To date, the referral by the United States of evidence regarding vessel pollution violations to the vessel's State of registry has not established a high likelihood of effective prosecution for these offenses by the Flag States.

[7] USAM § 9-27.250. This includes an assessment of potential disciplinary actions against responsible individuals by the vessel owner or operator, the potential of suspension and revocation hearings against a mariner's license in the United States, the potential for administrative sanctions by the U. S. Coast Guard, and the potential for a referral to another component of the Department of Justice for pursuit of civil penalties.

[8] Factors in Decisions on Criminal Prosecution for Environmental Violations in the Context of Significant Voluntary Compliance or Disclosure Efforts by the Violator, July 1, 1991. http://www.usdoj.gov/enrd/factors.htm

[9] Principles of Federal Prosecution of Business Organizations, January 20, 2003. http://www.usdoj.gov/dag/cftf/corporateguidelines.htm

[10] Ibid., Sec. I.

[11] Ibid, Sec I.B.

[12] Ibid., Sec. IV.

[13] Ibid., Sec. VI.

[14] Ibid., Sec. VI.B.

[15] Ibid., Sec. VII.

[16] Title 33, United States Code, Section 1908(e).

Wastes and Machinery Space Maintenance

by Ken Olsen
U.S. Coast Guard Office of Investigations and Analysis

Articles in this issue of *Proceedings*, others in maritime publications and trade journals, and agency press releases indicate that ship source pollution cases are often associated with bypassing the oily water separation equipment and presenting to officials falsified records in the oil record book (ORB) about bilges, oily wastes, and sludge management. When the facts are examined more closely, the problem appears to be not just related to the oily water separator (OWS) but, rather, more symptomatic of larger waste management issues. The improper operation, misuse, or complete bypassing of the OWS and the falsification of the ORB are simply manifestations of broader waste stream and vessel maintenance concerns.

Oily Wastes

Onboard deep draft vessels, two categories of oily wastes generally accumulate: bilge wastes and a sludge-type waste that stems from routine operation of purification equipment and from a specific type of propulsion engine design. Machinery spaces of large commercial vessels contain a wide array of complex engineering systems to propel and power the vessel. Supporting systems may be those used to manage fuel, lubrication, fuel and lubricating oil purification, saltwater service, circulating, bilge and ballast, firefighting, and sewage. Each system contains numerous pumps, fittings, control devices, and other components, along with extensive lengths of piping to manage the medium. All components are engineered to prevent and minimize leakages by utilizing mechanical seals, gaskets, or other sealing methods. None of the systems, equipment, and components are designed to be maintenance free. Each system's reliability and efficiency, in terms of preventing medium losses, are affected by the type of maintenance it receives. The difficulty in completely maintaining these systems to prevent even the smallest of leaks is a key contributor to bilge loading and bilge wastewater accumulations.

Small leaks, like those from our faucets at home, can accumulate very large quantities of wastes that must be processed by an OWS. Over the course of a month, a single eighth-inch stream of fluid flowing off an engine room component can accumulate up to 29 cubic meters of bilge waste. A leaking pump gland on a system under pressure can easily produce release rates of 17 cubic meters per day. Considering the enormity of shipboard machinery spaces, the kilometers of piping, thousands of fittings and connections, and the many pumps installed onboard deep drafts, any of which may develop leaks, waste accumulations of 20 cubic meters per day or more on some vessels may occur. Add to this quantity condensate developed by main engine air cooling systems, fluids generated by tripped evaporators, drains from engine room sinks, engine room cleaning, and leakages from other equipment and procedures, and very large quantities of bilge water waste may accumulate very quickly.

Deep draft vessels generally burn lower quality heavy fuel oil in their main engines and at times in auxiliary engines. This fuel contains contaminates that are not

The improper operation, misuse, or complete bypassing of the oily water separators and the falsification of the oil record book are simply manifestations of broader waste stream and vessel maintenance concerns.

removed during the refining processes. Additional contamination may occur during transfers and storage prior to delivery to the vessel and while onboard. To prevent damage to engine components, retard wear, and improve combustion, the fuel is purified before entering the engines by centrifuges. The machines are typically self-cleaning and operate continually to remove both solids and fluid contaminates. Fuel oil flows through the machine, and the heavier solid contaminates are forced by centrifugal force to the outer walls of the centrifuge. At preset intervals a shoot cycle occurs, which ejects the contaminates. Water within the fuel is removed through other ports. Both the sludge and fluid contaminates gravitate to a sludge tank. The shoot cycles are controlled by timers, which the engineers set according to the quality of the fuel. Some fuel centrifuges may be fitted with other types of automatic sensing devices that control the ejection process.

Main and auxiliary engine lubricating oil is similarly processed. The machines may be self-cleaning, and the resultant sludge and waste fluids enter a sludge tank. The wastes produced in this process should be less than the quantities resulting from fuel oil.

On crosshead-type, slow speed, main propulsion engines, the area between the pistons and cylinders is lubricated by a separate system. Oil is injected along the cylinder walls and is scraped off by the piston's reciprocating action. The by-products of combustion contaminate the oil, and it is not reused. The wastes gravitate to a separate sludge oil tank known as a stuffing box or lantern ring drain tank. Eventually, the lube oil, fuel oil, and cylinder oil sludge may be consolidated in a single tank.

Figure 1: Example of a dirty bilge and rose box.

Processing

The bilge water resulting from the various leakages accumulates in the bilges and bilge wells and is typically transferred to a bilge holding tank. From there, the fluid may be processed by an OWS. The OWS serves to remove the oily wastes from the bilge water. Oil within the bilge water going overboard is limited so as not to exceed oil-to-water proportions of 15 parts per million (15 ppm). If that threshold is exceeded, the separator's oil content monitor (OCM) will automatically activate and trip the OWS control valves to secure the overboard discharge and revert the output back to the vessel's bilges or tanks.

The most common types of OWS equipment in use are based on coalescence-enhanced gravitational separation technology. During operation, separated oil accumulates at the top of the machine. When the volume of separated oil is sufficient, electrical probes initiate a discharge cycle. Processing stops; the unit becomes pressurized with clean water; and solenoid valves open and force the oil from the machine by displacement.

The separated oil is piped to a dirty oil tank and eventually combined with other accumulated sludge. This mixture of oil and sludge may then be transferred to an incinerator service tank where the fluids are prepared for combustion by heating and decanting of excess water. If an incinerator is out of commission or not installed, the wastes would be stored until disposal ashore. If the OWS or its OCM is inoperable, the bilge water should be kept onboard until legal disposal is possible.

Maintenance

On an ideal ship having minimum bilge loading and burning good fuel with minimum sludge production, the wastes management processes previously described may be adequate to ensure environmentally compliant operations. Tank capacities for both the bilges and sludges are not exceeded, and the incinerator and OWS both function as designed or arrangements are made for routine shore disposal of both bilges and sludges. Ongoing maintenance and repair are required for these processes and procedures to work continually, not just for the pollution prevention equipment, but for all the systems within the machinery space. Otherwise, excess amounts of wastes will develop and surpass the processing capabilities of the pollution prevention equipment or the storage capacities of the vessel.

Just as automobiles we drive get older and require additional maintenance and repair, so do commercial vessels. And, similarly, when we might delay repairs—for example, a small oil leak because we need the car for a trip or do not wish to spend the money at the time—similar types of decision-making may occur on commercial vessels. Further, as even some new car owners and vessel owner/operators may discover, the need for ongoing extensive maintenance and repair is not limited to aging vessels but may also affect newer vessels.

An owner/operator must never embrace the concept that a marginally operating oily water separator and incinerator can compensate for all other engineering system and resource-related problems onboard the vessel.

Repair prioritizations are routine for shipboard engineering personnel and shore side technical managers; occasionally, even senior corporate management may be involved. Deciding what system to repair first may vary depending on the type and service of the vessel. For instance, on a passenger vessel, systems that impact passenger experience may receive priority for maintenance and repair, while auxiliary systems within the bowels of the vessel may receive less attention. On a tank ship or freighter, the cargo-handling equipment and propulsion may receive the primary attention, while the repair of system leakages may have a low priority unless they impact critical systems or become too costly or a safety hazard.

Comparatively speaking, certain systems will be more important in terms of receiving maintenance, and repair requirements of various importance will be placed on lists and scheduled for future work. Those seemingly minor leakages from different sources throughout the machinery space may continue to enter the bilges, mix together, and accumulate because they will typically fall into the less urgent repair category (Figure 1).

A vessel's schedule can affect an owner/operator's ability to perform maintenance and repair. There may not be enough time within the schedule to fix an oil leak from an engine or system that causes releases into the bilge. Or the costs associated with the repair may be far greater then the cost of replacing the oil, so decisions are made to let the leak continue. Taking a vessel out of service to make the repair involves significant costs and additional losses associated with cargo or passenger revenues. A less scrupulous owner/operator may make a repair decision by weighing the odds of discovery, prosecution, and associated costs against the revenue generated by continued operations.

The competitiveness of a particular company within a segment of the industry hinges partially on the quantity of crew and associated costs required to operate the vessel. Although the type of crew and positions needed for safe operation are prescribed, they may not accurately reflect the manning needed to maintain the vessel adequately. A ship, again much like our autos, has a lifespan, and, eventually, it will become uneconomical for an owner/operator to sustain continual levels of maintenance and repair.

Another economic pressure exists when excessive tonnage is available and owner/operators are competing in a limited market. Charter rates may drop, potential profit margins may decrease and owner/operators may try to recoup losses by deferring vessel maintenance requirements or other costs associated with safety or environmental compliance.

Conclusion

Despite these pressures, to avoid becoming embroiled in an environmental crimes investigation and its resulting costs, an owner/operator must never embrace the concept that a marginally operating oily water separator and incinerator can compensate for all other engineering system and resource-related problems onboard the vessel. Additionally, relying on Classification Society, Port State, and Flag State, insurance certification and inspection processes is inadequate to prevent the circumstances leading to excessive waste accumulations. Routine environmental violations have occurred onboard some vessels despite the historic interaction between these and other principals. Violations have also occurred despite the requirements of different types of safety, quality, or environmental management systems used by various organizations.

Lastly, owner/operators and management teams must always know the condition of their vessels' systems, amount of bilge loading occurring, quantity of sludge production, limitations and the operational status of pollution-prevention equipment. When problems are discovered, the necessary corrective actions and remedies must be prompt. Vessel maintenance conditions that encourage shipboard employees to illegally discharge wastes overboard must be avoided.

Environmental Crimes Case File: *Alkyon*

United States v. Ionia Management, S.A. and Christos Kostakis (E.D.N.Y.)

by Andrew J. Frisch
Senior Litigation Counsel, U.S. Attorney's Office

The Coast Guard's investigation of the motor vessel *Alkyon*, a Bahamian-flagged tanker owned by Ionia Management, S.A. in Greece, revealed examples of a chief engineer's creation of pervasively false oil record books and a ship owner's use of extraterritorial means to frustrate a successful investigation.

The Inspection

Inspection of the *Alkyon* upon its arrival in New York Harbor in January 2002 established that the crew was using a pipe to bypass the *Alkyon*'s separator and to discharge oily water directly from the vessel's bilges to the sea. The inspecting officer initially observed a removable foot-long elbow-shaped pipe in piping connecting the separator to the sea (Figure 1), and oil stains below the pipe on a bulkhead, to which was attached a bracket serving no ostensible purpose (Figure 2). When the officer demanded that the crew produce "the bypass pipe," Chief Engineer Christos Kostakis went to another deck and returned two to three minutes later with a pipe that easily replaced the elbow-shaped pipe, fit neatly on the bracket, and connected the vessel's bilges to the discharge pipe and the sea (Figure 3). Upon further inspection, a blank gasket was found blocking the separator (Figure 4) and oil was found in the pipe leading to the sea (Figure 5). Upon testing the separator, oily water seeped from the separator piping onto the bulkhead (Figure 6).

Figure 1: Chipped paint and greasy fingerprints on overboard discharge valve.

Figure 2: Heavy oil stains on bulkhead and a bracket serving no particular purpose.

BEFORE

AFTER

Figure 3: "I only use it for emergencies."

Figure 4: Upon opening piping leading overboard, a blank gasket was found blocking the oil water separator.

Figure 5: Heavy deposits of oil were found in the pipe leading to the sea.

Upon producing the bypass pipe, Chief Engineer Kostakis volunteered that he used the bypass pipe only in "emergencies." This was a curious claim, given the time it took him to retrieve the pipe from another deck, the absence of any emergency recorded in the vessel's oil record book, and a fire pump elsewhere on the vessel that would be far more effective than the narrow bypass pipe in quickly pumping water overboard in a true emergency.

The Numbers Don't Add Up

Subsequent analysis of the *Alkyon*'s logs established that the chief engineer's oil record books were pervasively false. For example, his entries reflected about 30 proper uses of the separator in 2001, but those entries were inconsistent with a log separately and contemporaneously maintained by junior members of the *Alkyon*'s engineering staff. That other log showed that the amount of oily water in the *Alkyon*'s bilge collecting tank remained the same, even as Kostakis recorded his purported uses of the oil-water separator in the oil record book. If Kostakis' entries were true, the other log would have shown a corresponding emptying of the bilge-collecting tank. In addition, Kostakis recorded quantities of oil residue—the byproduct of his purported use of the separator—burned in the *Alkyon*'s incinerator that far exceeded the incinerator's capacity.

After Chief Engineer Kostakis was arrested, the ship owner made junior members of the *Alkyon*'s engineering crew available for interviews with investigators. The fourth engineer told the investigators that Chief Engineer Kostakis routinely bypassed the separator, directed his subordinates to stop the discharge of oily bilge water to the sea if it became too dark (to impede detection of the discharge), and routinely hid the bypass pipe on board the *Alkyon* whenever it neared port.

Crew Shanghai-ed?

While the investigators had the option of executing material witness warrants for the fourth engineer and other members of the crew, they elected instead to serve grand jury subpoenas, relying on the ship

Figure 6: Upon testing the separator, oily water seeped from the separator piping onto the bulkhead.

owner's adamant assurances that it would honor the subpoenas and make those crewmembers available upon request. That reliance was misplaced. Almost as soon as the ship left U. S. waters, the ship owner's counsel advised the investigators that all of the subpoenaed crewmembers had been either repatriated to the Philippines or transferred to other ships at the crewmembers' urgent requests because of "fear and high anxiety" about the government's "unwarranted" arrest of Kostakis.

A week later, the *Alkyon* returned to the United States at Houston. While none of the subpoenaed crewmembers were on the *Alkyon*, 10 other crewmembers who had also been on board in New York remained. Those 10 crewmembers were arrested as material witnesses to Ionia's apparent obstruction. None of them confirmed to the investigators that the subpoenaed crewmembers had all simultaneously requested to be repatriated or transferred to another ship. To the contrary, they knew from direct conversation with one or more of the departed crewmembers that the subpoenaed crewmembers had inexplicably been sent home by Ionia. As one crewmember put it, "People were surprised because they were told that they will be replaced," and "Nobody requested that they will go home."

The Cover-Up

When agents executed the witness warrants in Houston, they also executed a search warrant issued by a Texas magistrate judge. The search of the ship resulted in additional evidence of obstruction. The agents found large gaps in the ship's sequentially numbered communications during the time period covering the departure of the subpoenaed crewmembers. In addition, 62 pages of a notebook covering that same time period in which the ship's captain had written out telexes in longhand were missing. Among the few telexes on the *Alkyon* was one ostensibly authored by the ship's captain apparently sent from the ship to Ionia in Greece, which, in substance, said that all the subpoenaed crewmembers wanted to leave the ship because of "psychological pressure" from the federal investigation.

Shortly after Ionia's obstruction was revealed, Kostakis and Ionia pled guilty: Kostakis to presenting a false oil record book to the Coast Guard, in violation of Title 18, United States Code, Section 1001, and Ionia to the same crime based on its vicarious liability for Kostakis' criminal conduct within the scope of his employment.

Guilty

While Ionia's sentence was significantly enhanced for its obstruction of the government's investigation, the sentencing court declined to apply an enhancement under the United States Sentencing Guidelines to Kostakis' sentence for extraterritorial fraud.

The sentencing court interpreted the guideline enhancement for extraterritorial fraud as implicitly requiring a showing of sophisticated conduct, which the court found lacking in what it described as Kostakis' simple use of a bypass pipe. The government appealed that ruling to the United States Court of Appeals for the Second Circuit, arguing alternatively that sophistication was not a requirement of the enhancement, and that Kostakis' maintenance of a pervasively false oil record book was sophisticated. The appellate court declined to resolve the disputed interpretation of the guideline enhancement but found that the sentencing court had plainly erred in finding Kostakis' fraud to be unsophisticated. The court found that: "[The oil record book] entries concealed the fact that Kostakis routinely instructed his subordinates to dump oily water directly into the sea, most often at night. These falsified entries had numerous technical components, and were made with the purpose of deceiving the Coast Guard."

Vessel Pollution and Related Maritime Offenses, 1989-2004

A compilation of selected criminal prosecutions.

by Environmental Crimes Section, *U.S. Department of Justice*

This case list summarizes a number of the major criminal vessel pollution and related maritime prosecutions that have been brought in the United States over the past 15 years. The list illustrates the steady development of this critical area of environmental enforcement during the time period and demonstrates the range of federal criminal statutory authority[1] that can be brought to bear against the unlawful conduct reflected in the cases.

UNITED STATES V. RICK STICKLE, ET AL. (S.D. FLA.)

On November 23, 2004, a jury returned guilty verdicts on all counts against Rick Stickle, chairman of Sabine Transportation Company, an Iowa-based company that operated a fleet of U.S. registered vessels. Four other defendants charged in the case entered into plea agreements and agreed to cooperate with the government. The charges stemmed from the unlawful dumping of 442 metric tons of diesel-contaminated grain from the *S.S. Juneau* into the South China Sea. The defendants also engaged in a series of false and misleading statements to the U.S. Coast Guard, the U.S. Department of Agriculture and other government officials in an effort to conceal and cover up the unlawful disposal.

The indictment in the case charged Stickle, three shore-side corporate officers, and two shipboard officers with participation in a criminal conspiracy, an Act to Prevent Pollution from Ships (APPS) discharge violation, and a false pretenses offense. The defendants who entered into plea agreements and cooperated with the government included Michael Reeve, the former company president; Michael Krider, a former marine superintendent; George McKay, a former master of the *Juneau*; and Philip Hitchens, the former chief officer of the *Juneau*. John Karayannides, the former vice president of operations, was also charged in the indictment, but he is a resident of Greece and did not return to the United States to answer the charges

UNITED STATES V. BOUCHARD TRANSPORTATION COMPANY, INC. (D. MASS.)

For this case's summary, please see this issue's back cover.

UNITED STATES V. SABINE TRANSPORTATION COMPANY (N.D. IOWA)

On August 10, 2004, Sabine Transportation Company ("Sabine") was sentenced to pay a $2 million fine with $1 million to be paid to three whistleblowers. Also, as a condition of three years' probation, the company will operate under an environmental compliance plan. Sabine pled guilty in July 2003 to an information charging the vessel man-

agement company with eight APPS violations. Five counts stem from illegally dumping 440 tons of diesel-contaminated grain, oil-contaminated bilge wastes, contaminated diesel fuel, and plastic wastes. Sabine also pled guilty to an APPS failure to notify count and two false oil record book counts. The company, which operated a fleet of eight U.S. flagged ships, engaged in additional similar discharge violations while its ships operated on the high seas.

UNITED STATES V. OMI CORPORATION (D. N. J.)

On August 6, 2004, OMI Corporation ("OMI") was sentenced to pay a $4.2 million fine, half of which was paid to a crewmember whistleblower. The company will also serve three years' probation.

Guadalupe Shipping LLC was the owner of the *MT Guadalupe*, a tanker that carried various types of petroleum products, including jet fuel and diesel fuel. OMI Marine Services LLC was the operator of the *MT Guadalupe*. Both Guadalupe Shipping LLC and OMI Marine Services LLC were wholly owned subsidiaries of the OMI Corporation.

The captain and chief engineer for the *MT Guadalupe* previously pled guilty to falsifying the ship's oil record book, for asking crew members to lie to the U.S. Coast Guard (USCG), and for asking engineers to conceal illegal oil discharge bypass pipes that were used during a five-month period in 2001. In September 2001, the ship's second engineer went to a local police department when the ship docked in Cartaret, N.J. He informed the police that he was being ordered to dump oily wastes at sea.

OMI pled guilty in January 2004 to preparing false documents in an effort to cover up the illegal dumping of thousands of gallons of waste oil at sea, in violation of APPS. The individual defendants have not yet been sentenced.

UNITED STATES V. JOHNNIE NIELSEN (N.D. CAL.)

On July 26, 2004, Johnnie Nielsen, a second engineer, pled guilty to concealing and later destroying key documents in anticipation of a pending USCG inspection aboard the *M/V Jane Maersk*. The inspection ultimately uncovered evidence that illegal discharges of oil may have occurred on the ship, which is owned by Partrederiet H668 and operated by A.P. Moller Maersk A/S. Maersk is viewed as one of the largest shipping companies in the world.

The government's investigation began on May 25, 2004, when USCG inspectors discovered waste oil in the overboard piping of the tanker during a routine inspection. They also found evidence of false entries made in the oil record book. As part of the investigation, Nielsen was asked about the existence of the ship's sounding log. The sounding book records daily measurements of tanks aboard a vessel, including tanks that contain oil, waste oil, and sludge. These daily measurements are used to calculate and record the transfers, disposals, and discharges of oil, sludge, and oily water in the oil record book.

Prior to the USCG boarding, Nielsen removed the sounding log from the engine control room, took it to his cabin, and instructed the third engineer to tell the USCG that the vessel did not have nor use a sounding log. At some point, Nielsen returned to his cabin and tore out the relevant pages of the sounding log and threw them in the trash.

UNITED STATES V. HÖEGH FLEET SERVICES, ET AL. (W.D. WASH), (N.D. CALIF.), (C.D. CALIF.)

On June 30, 2004, Höegh Fleet Services A/S, ("Höegh"), a Norwegian operator of a fleet of cargo ships, was sentenced to serve a four-year term of probation and must pay a $3.5 million fine. Of that amount, $1.6 million will be used to fund environmental projects that benefit, preserve and restore ecosystems adjoining the coastlines of Washington and California. The company will also develop and implement a comprehensive environmental compliance plan for its fleet of 38 vessels that call on U.S. ports. The court further awarded a $300,000 whistleblower reward to a crewman who risked his life in two attempts to notify authorities of the illegal dumping.

In March 2004, Höegh pled guilty in three districts to seven felony counts, including obstruction and making false statements to federal inspectors for falsifying records and concealing evidence of intentionally dumping waste oil into the ocean. Vincent Genovana, an engineer for the *M/V Höegh Minerva*, a vessel managed by Höegh, was sentenced to time served in February 2004 after pleading guilty to obstruction and false statement violations in September 2003. He will be deported back to his native Philippines after two years' supervised release. Genovana instructed other crewmembers onboard the ship to construct a "magic pipe" that was subsequently used to bypass pollution preven-

tion equipment and discharge oily waste directly into the ocean. Genovana took several steps to conceal evidence of the bypass activity and avoid detection by USCG inspectors.

UNITED STATES V. KNUT SORBOE ET AL. (S.D. FLA.)

On December 18, 2003, Knut Sorboe, Peter Solemdal, and Aage Lokkebraten were indicted in connection with their employment for Norwegian Cruise Line Limited ("NCL") onboard the *SS Norway*. Defendants Sorboe and Solemdal are former chief engineers, and defendant Lokkebraten is a senior first engineer. The indictment alleges that the defendants engaged in a conspiracy to use false oil record books to conceal overboard discharges from the ship without required pollution prevention equipment and to obstruct USCG inspections.

NCL, the world's fourth largest cruise line, pled guilty to a felony violation of the APPS and has paid a $1 million criminal fine and $500,000 in environmental community service projects. Pursuant to APPS, the court awarded $250,000 of the fine to a former employee who provided information leading to the conviction. NCL has admitted that it engaged in a practice of systematically lying to the USCG over a period of years regarding the discharge of oil-contaminated bilge waste from the *SS Norway*.

UNITED STATES V. FAIRMONT SHIPPING (CANADA) LTD. ET AL. (D. OREGON)

On November 21, 2003, Fairmont Shipping (Canada) Ltd. ("Fairmont") was sentenced to serve a four-year term of probation plus pay a $450,000 fine. Half of the fine was paid as a whistleblower award to the second engineer who alerted the USCG that one of the company's ships was bypassing the oily water separator and dumping wastes directly in the ocean and falsifying the oil record book. The second engineer took photographs of the bypass hoses in place, which he then turned over to investigators.

An indictment was returned on November 6, 2003, charging Botelho Shipping Corporation ("Botelho"), Fairmont, Virgillo Perillo, and Felix Sicapero with conspiracy, obstruction of official proceedings, violation of oil pollution regulations, and making false statements to the government. Botelho is the owner of the *M/V Emerald Bulker*, a 158.7 meter, oceangoing, dry bulk carrier that sails under a Philippine flag, and Fairmont was the operator. Between February and August 2003, Perillo was the chief engineer on the ship, and Sicapero was the current chief engineer.

During a ship's inspection in October 2003 at the Port of Portland, inspectors and agents from the USCG and U.S. Environmental Protection Agency (EPA) discovered a bypass hose from the oily water separator, plus evidence that flanges and valves had been freshly painted in an apparent effort to conceal the illegal bypass. Evidence of false record keeping was also found. The chief engineers were further charged with instructing crewmembers in the engine room to use the bypass hose at sea and at night to avoid detection. The crew also disassembled the bypass hose and hid it onboard when the vessel was approaching port.

On November 26, 2003, Sicapero was sentenced to serve three years' probation and Perillo remains a fugitive. In December 2003, charges were dismissed against Botelho, and Fairmont pled guilty to an APPS violation on November 14, 2003.

UNITED STATES. V. RONALD COOK, (D.D.C.)

On August 26, 2003, Ronald Cook was sentenced to serve 24 months' incarceration with credit for time served, to be followed by three years of supervised release. Cook was convicted in March 2003 on conspiracy, APPS, and ocean dumping violations. He was immediately remanded back into custody to await sentencing.

Cook was indicted in the District of Columbia in April 1999 pursuant to the high seas venue statute. He was extradited in November 2002 from Vancouver, British Columbia, and remanded into custody at that time.

Dunes Marina Resort and Casino, Inc., ("DMRCI"), purchased a vessel, the *M/V Muskegon Clipper*, for the purpose of converting it into a riverboat gambling casino. In February 1994 DMRCI arranged for the *Muskegon Clipper* to be towed from Seattle, Wash., through the Panama Canal, to a shipyard in Mobile, Ala., for renovation. Cook was employed as the supervisor of the crew hired in March 1994 to perform demolition work aboard the vessel while it was under tow, including the removal of asbestos. During the renovation on the high seas, employees of DMRCI, at Cook's direction, testified at trial that they dumped "hundreds" of plastic bags containing asbestos into the ocean. The company pled guilty and was sentenced in March 1998 to pay a $250,000 fine.

UNITED STATES V. BILLABONG II ANS, NO. CR- 00-00399 (D.S.C.)

On July 17, 2003, Billabong II ANS, a Norwegian corporation that owns the *M/V Star Evviva*, was sentenced to serve a one-year term of probation and ordered to pay a $200,000 fine, plus $300,000 to the National Fish and Wildlife Service.

On January 10, 2003, the company pled guilty to negligently violating the Clean Water Act (CWA). In January 1999, the *Star Evviva* was traveling from Baltimore, Md., to Savannah, Ga. During an automated fuel transfer, fuel oil overflowed a tank. The oil spilled onto the deck and into the sea approximately 30 to 50 miles off the coast of South Carolina. Ship personnel did not notice the overflow for several hours because of a faulty alarm and the fact that the engine room was unmanned at that time. The former captain and former chief engineer of the ship were indicted in May 2000 and remain fugitives.

Danilo Cardozo and John Buendia were charged with negligently causing the discharge of approximately 24,000 gallons of fuel oil in violation of the CWA. Cardozo and Buendia are also charged with killing and wounding migratory birds (loons) in connection with the oil spill, in violation of the Migratory Bird Treaty Act. Approximately 180 oiled birds were collected after the spill with half of them already deceased. The defendants are further charged with conspiring to tamper with a witness and making false statements to federal law enforcement officers. Specifically, the indictment alleges that the defendants ordered the second engineer on board to falsely state to the USCG that he was standing watch in the engine room during the oil spill but did not notice the spill. The indictment further alleges that on January 16, 1999, Cardozo, Buendia, and the second engineer falsely reported to the USCG in Savannah that the second engineer was on watch during the spill.

UNITED STATES V. TA TONG MARINE (W.D. WASH)

On July 15, 2003, Ta Tong Marine Co., Ltd., a Taiwanese cargo shipping company, was sentenced for two felonies relating to the falsification of records to conceal the dumping of waste oil into the ocean. The company was ordered to pay a $750,000 fine, plus an $800 special assessment; develop and implement a comprehensive environmental compliance plan for its fleet of vessels; and serve four years' probation. The company pled guilty on April 15, 2003, to a false statement and an APPS violation.

On February 3 and 4, 2003, inspectors with the USCG and State of Washington boarded the *M/V Grand Glory*, a marine vessel operated by Ta Tong Marine. The inspectors discovered a flexible hose that had been fabricated and used to bypass pollution prevention equipment onboard the vessel. Investigation further revealed that approximately 17 tons of oil sludge had been discharged directly into the ocean. During the inspection, the crew presented the oil record book to inspectors with entries falsely indicating that oily wastes had been incinerated.

UNITED STATES V. DUK JO JEONG (D. OREGON)

On October 24, 2002, Duk Jo Jeong, an assistant engineer on the *M/V Cygnus*, a car-carrier ship that transported automobiles between Japan and the United States, pled guilty to one false statement violation. He was immediately sentenced to serve two years of probation and will be deported to Korea. The court noted that Jeong had already served six months of incarceration while awaiting disposition of his case. Co-defendant and chief engineer Pyeong Gab Jung pled guilty and was sentenced for making false statements in the ship's oil record book. Jung was immediately sentenced to serve three months of imprisonment, following which he will be deported to Korea.

Jung and Jeong were charged in May 2002 with three false statement violations related to illegal discharges of oil sludge and bilge oil. A search of the *Cygnus* by USCG, EPA, and Oregon and Washington environmental inspectors revealed a bypass hose, oily residue found in an overboard valve, and a broken oil incinerator. Jung was charged with making false entries in the oil record book, and Jeong was charged with lying to the USCG for denying knowledge of the bypass pipe. Both defendants were additionally charged with concealment of a material fact for ordering the painting of the overboard discharge valve from the ship's oily water separator (OWS) to cover up and conceal the fact that a hose was being used to bypass the OWS.

UNITED STATES V. SEOK YANG, ET AL. (D. ALASKA)

UNITED STATES V. BOYANG MARITIME ET AL. (D. ALASKA)

On October 23, 2002, four maritime corporations were ordered to pay a $5 million fine and ordered to place another $500,000 in an escrow account to pay for a comprehensive environmental compliance plan. Boyang Maritime, Boyang Limited, Trans-Ports International and Oswego Limited pled guilty in August 2002 to participating in a long-term conspiracy designed to hide routine illegal discharges of oil sludge and oil-contaminated bilge water from a fleet of large refrigerated cargo ships that regularly travel through Alaskan waters since at least 1995. The companies acknowledged that they maintained false records, obstructed justice and tampered with witnesses to avoid compliance with the laws designed to prevent oil pollution from ships.

As part of the same investigation, a corporate director and two corporate managers were separately indicted in August 2002 on conspiracy to obstruct justice, keep false records, and tamper with witnesses to hide the routine dumping of waste oil at sea. In Seok Yang, director of Boyang Maritime, and Young Min Han, an on-shore manager, are alleged to have engaged in specific acts of witness tampering, including personally instructing crewmembers to lie to U.S. investigators. Ms. Gum Hyang Kwon, also an on-shore manager for Boyang Maritime, is charged with traveling to Anchorage to prevent witnesses from telling the grand jury the truth about Boyang's practice of improper oil discharges. These are the first of such charges to have been filed against a corporate board member for his role in an oil pollution conspiracy. Similarly, Kwon and Han are among the first on-shore managers to be charged for their alleged roles in oil discharges that occurred at sea. These three individuals, along with another ship's captain and ship's first engineer, are currently fugitives.

UNITED STATES V. NORWEGIAN CRUISE LINE LIMITED (S.D. FLA.)

On July 31, 2002, Norwegian Cruise Line Limited (NCL), the world's fourth-largest cruise line, pled guilty to a felony violation of the APPS and has agreed to pay a $1 million criminal fine after turning itself in and cooperating with prosecutors. NCL discovered the violations during an internal audit ordered by new owners after the company learned that a former employee had reported the dumping of waste oil to the EPA. The cruise line's outside auditor actually witnessed NCL engineers aboard the *SS Norway* in the act of circumventing the ship's oil water separator by using freshwater to trick a machine's oil sensor. NCL promptly reported the offense to the government, but an EPA investigation already had begun based upon the whistleblower's allegations. The cruise line pledged its full cooperation, conducted and divulged an internal investigation, fired or accepted resignations from seven senior shore-side personnel, and has been assisting the United States in its ongoing investigation of culpable individuals.

NCL admitted that it engaged in a practice of systematically lying to the U.S. Coast Guard over a period of years regarding the discharge of oil-contaminated bilge waste from the *SS Norway* and at least one other ship. Entries into the oil records books were falsified to conceal from the Coast Guard that oil-contaminated bilge waste was being dumped overboard.

UNITED STATES V. D/S PROGRESS ET AL. (D. MD.)

On March 8, 2002, D/S Progress was sentenced to pay a $250,000 fine for conspiring to conceal a hazardous leak in the hull of an oil tanker that entered Baltimore Harbor, for failing to report emergency discharges, and for presenting false logbooks to the USCG. The company pled guilty in October 2001 to violations of the Ports and Waterways Safety Act (PWSA), APPS and a conspiracy to violate those statutes.

D/S Progress, a ship management company based in Copenhagen, Denmark, was responsible for the *Freja Jutlandic*, an oil tanker that arrived in Baltimore Harbor on March 22, 2000. Crewmembers, concerned that their lives were in danger, secretly slipped a note to USCG inspectors, alerting them to the presence of the hazardous leak. USCG officers found a steady stream of seawater flowing into the ship from a hole in the hull covered by a makeshift repair and required immediate repairs at a Baltimore shipyard.

At sentencing, the two crewmembers who wrote the note to the USCG were awarded with half of the $250,000 criminal fine from the now bankrupt cor-

porate defendant under a bounty provision in the APPS. The crewmembers will split half of a $250,000 surety bond that D/S Progress was forced to post by the USCG.

Remaining under indictment are K/S Chemical Transporter, the Danish owner of the *Freja Jutlandic*; Davor Maric, the ship's captain; Ryzard Pawlowski, the ship's chief engineer; Jo Goksoyr, a shore side superintendent employed in Denmark by D/S Progress; and Erik Moller, a D/S Progress vice president who allegedly ordered the dumping of approximately 25,000 gallons of fuel oil contaminated with water during a return voyage from Mexico to Baltimore in April 2000.

UNITED STATES V. HOLLAND AMERICA LINE, HAL BEHEER BV ET AL. (D. ALASKA)

On April 6, 2000, Nanne Hogendoorn, Dirk Smeenk, and Hantje DeJong were each sentenced to serve two years' probation and pay a $10,000 fine for their guilty pleas to a misdemeanor CWA charge taken in December 1999. Hogendoorn's plea was the first time a land-based cruise ship corporate employee was convicted for illegal discharges at sea. Smeenk and DeJong were the first cruise ship employees convicted for vessel pollution violations at sea. A fourth defendant, Willem Spierens, remains at large.

The corporation, Hal Beheer, which operated the Holland America Line cruise ship, the *SS Rotterdam*, was sentenced in October 1998 to pay a $1 million fine, with an additional $1 million in restitution to go to the National Park Foundation, plus five years' probation after pleading guilty to two APPS violations in June 1988. The case came to light after an assistant engineer told the U.S. and Canadian Coast Guards in 1994 that he had refused an order to pump untreated bilge water overboard.

UNITED STATES V. M/G TRANSPORT INC., ET AL. (S.D. OHIO)

On January 20, 2000, MG Transport Services, Inc. was resentenced to pay an additional $150,000 fine. J. Harschel Thomassee, former port engineer, was sentenced to pay a $1,000 fine and serve a one-year probation. Fred E. Morehead, boat captain, was sentenced to serve four months' home confinement followed by a 30-month probation term and ordered to pay a $4,000 fine. Robert S. Montgomery, boat captain, was also sentenced to serve four months' home confinement, complete a 30-month probation term and ordered to pay a $2,000 fine. In October 1997, the company was sentenced for a conspiracy failure to notify violation, receiving two years of probation and a fine of $250,000. Thomassee was sentenced to two years of probation, with 180 days to be spent in home confinement, and a fine of $22,500.

In *United States v. M/G Transport Services, et al.*, 173 F.3d 584 (6th Cir. 1999), the court issued an opinion reversing the district court's post-trial judgments of acquittal on six CWA counts and remanding for entry of judgment and sentencing in accordance with the verdicts rendered by the jury. The Sixth Circuit concluded that the CWA charges were not violative of the due process clause because, contrary to the arguments advanced by the defendants, the testimony adduced at trial did not establish that NPDES permits could never be issued for any controlled discharges into the rivers. Rather, the regulatory testimony at trial simply established that the quantity and quality of the pollutants dumped by the defendants would not have been permitted.

The Sixth Circuit also concluded that there was sufficient circumstantial evidence as a matter of law to find that the crimes charged in the CWA counts were committed on or about the dates alleged. Finally, the Sixth Circuit concluded that there was sufficient circumstantial evidence to support the convictions of the vessel captains for the CWA counts in that: a) the captains' logs indicated when the trash was burned; b) the testimony was uncontroverted that the contents of the burn barrels were thereafter dumped into the river; c) there was no other method of waste disposal for the burn barrel residue; d) knowledge of the illegality could be inferred from the fact that the dumping occurred at night in remote locations; and e) the defendants' own evidence indicated that vessel captains could request the port captain to arrange for a barge to offload waste for proper disposal.

The prosecution originated from illegal discharges, spanning a 20-year period, of harmful quantities of oily bilge waste and solid operational wastes, including burned garbage from M/G's towboats into the Ohio and Mississippi Rivers. M/G, formerly one of the largest barge lines in the nation, was a subsidiary of the Midland Co., a Fortune 500 company.

UNITED STATES V. ROYAL CARIBBEAN CRUISES, LTD. (S.D. N.Y.) (S.D. FLA.) (D. ALASKA) (C.D. CAL.) (D. V.I.) AND (D. P.R.)

On July 21, 1999, Royal Caribbean Cruises Ltd.

entered into a plea agreement agreeing to pay an $18 million criminal fine and plead guilty to 21 felony counts for dumping waste oil and hazardous chemicals and lying to the USCG.

The plea agreement was filed in U.S. District Court in six cities: Miami; New York City; Los Angeles; Anchorage; St. Thomas, U.S. Virgin Islands; and, San Juan, Puerto Rico. As of January 2000, the company was sentenced in all six districts. Each district sentenced the company to serve a five-year probation term and required it to operate under a court-supervised environmental compliance program. Fine amounts and community service payments, however, varied among the courts.

In the agreement, Royal Caribbean admitted that it routinely dumped waste oil from its fleet of cruise ships and that it deliberately dumped many other types of pollutants, including hazardous chemicals from photo processing equipment, dry-cleaning shops, and printing presses, into U.S. harbors and coastal areas. Additionally, the company will plead guilty to presenting materially false statements about its oil discharges in its oil record books to the USCG. Royal Caribbean will also plead guilty to deliberately storing waste from its ships at a Port of Miami pier without a permit, in violation of Resource Conservation and Recovery Act (RCRA).

The 21 new representative charges follow a guilty plea by Royal Caribbean in June 1998 for similar environmental crimes in Miami and San Juan. The 1998 pleas, resulting in a $9 million criminal fine, involved charges that the company engaged in a fleet-wide conspiracy to dump oil into U.S. coastal waters and lied to the USCG to cover up the crime.

UNITED STATES V. PEARL SHIPPING CORP. ET AL. (C.D. CAL.)

On December 13, 1999, ANAX International Agencies, Inc. was sentenced to pay a total of over $9.4 million in federal, state, and local civil penalties, criminal fines, and restitution, including natural resource damages of almost $2.7 million, and was placed on three years' probation. Dimitrios Georgantas was ordered to serve three years' probation and was barred during that time from working on any vessel doing business in any American port. The chief engineer, Lampros Karaganis, was placed on pretrial diversion for 18 months, during which time he is also prohibited from working on any ships in this country. Charges against Pearl Shipping Corp. were dropped.

Guilty pleas were entered in September 1999 to a negligent Oil Pollution Act (OPA) violation and a failure to report a discharge for the illegal discharge of bunker fuel oil into the Pacific Ocean near San Francisco in September 1997. The 3,000-gallon oil spill resulted in the injury to, and deaths of, hundreds of birds and other sea wildlife and polluted beaches in San Mateo County. Cleanup and recovery costs totaled over $1 million.

UNITED STATES V. VARLACK VENTURES AND HUBERT FREDERICKS, 149 F.3D 212 (3RD CIR. 1998)

UNITED STATES V. CLIFTON BOYNES, JR. AND INTER ISLAND BOAT SERVICES, INC., 149 F. 3D 208 (3RD CIR. 1998)

On October 16, 1998, Hubert Fredericks was found guilty by a jury of violating the notification requirement of OPA because of his failure to notify the USCG of a discharge of oil into Cruz Bay. On December 4, 1998, Varlack Venture Ferry Service pled guilty to an OPA discharge violation and failure to notify the USCG of the discharge of oil into Red Hook Bay.

Fredericks was sentenced in July 1999 to serve eight months' imprisonment, followed by three years' supervised release, pay a $1,000 fine, and perform 150 hours of community service. Varlack Venture, Inc., was sentenced to pay a $50,000 fine, serve five years' probation, and expend $60,000 per year for five years to upgrade and improve its boat engines and implement an environmental compliance and employee-training program. It was also ordered to file quarterly compliance reports and to submit to unannounced USCG inspections. On January 29, 1999, Clifton Boynes, Jr., and Inter Island Boat Services, were both acquitted by a jury of one CWA violation alleging the knowing discharge of oil into Red Hook Bay.

On July 9, 1998, in two separate decisions, the Third Circuit Court of Appeals reversed the decision of the U.S. District Court in St. Thomas, Virgin Islands, which had suppressed evidence obtained without warrants by the USCG during second boardings and searches of the vessels. The Court of Appeals found the warrantless search in Boynes to be lawful on the grounds that the USCG had probable cause to believe that a crime had been committed and that a vessel is subject to the exigent circumstances exception to the warrant requirement. Notably, the court applied the exigency exception even though the vessel was in a

foreign dry-dock at the time of the search. The court of appeals did not reach the question of whether a warrant may be issued by a district court to search a U.S. flag vessel sitting in a foreign dry-dock.

In Varlack, the court found that the USCG's authority under 14 U.S.C.§ 89(a) allows for a warrantless search of a vessel where there is reasonable suspicion to believe that evidence of criminal conduct will be found. The court of appeals did not reach the question of whether a captain has standing to challenge the search of public areas of a vessel.

Varlack Ventures and Inter Island Boat Services are the two primary companies providing ferry services in and between the United States and the British Virgin Islands. In September 1996, indictments resulted from an initiative by the USCG in St. Thomas, in response to citizen complaints about oil pollution in Red Hook Bay and Cruz Bay.

UNITED STATES V. OCEAN CHEMICAL CARRIERS, INC., ET AL. (M.D. FLA.)

On April 22, 1997, Ocean Chemical Carriers, Inc. and its captain Peter Thorpe, pled guilty to one count of illegally discharging several thousand gallons of oily waste into the ocean and one count of failing to report the discharge, both in violation of the APPS.

On December 2, 1997, the company was sentenced to pay a $50,000 fine and $200,000 in restitution. The court also imposed a two-year term of probation and ordered the company to issue a public apology in the *Tampa Tribune*, the *Maritime Reporter*, and *Engineering News*. On June 12, 1998, Peter Thorpe was sentenced to three years' probation with a special condition of six months' home confinement and a $20,000 fine.

This prosecution arose from the illegal discharge of 60,000 gallons of oily waste into the sea from the *M/V Frances Hammer*, which is owned by Ocean Chemical Carriers, Inc. This was the first federal prosecution in the nation involving the knowing discharge of oily waste in international waters in violation of the APPS.

UNITED STATES V. PEDRO RIVERA, ET AL. (D. P.R.)

On April 25, 1996, Bunker Group Puerto Rico, Bunker Group, Inc., and New England Marine Services were convicted by a jury of violating the CWA, the PWSA, and Title 46, United States Code, Section 10908, for knowingly sending the tugboat *Emily S* to sea in an unseaworthy condition likely to endanger life. The company's general manager, Pedro Rivera, was also convicted by a jury of the statute that prohibits sending an unworthy vessel to sea.

On December 2, 1997, the First Circuit, en banc, reversed the conviction of the company's general manager for violation of the unseaworthiness statute. *United States v. Rivera*, 131 F.3d 222 (1997). This conviction had previously been sustained by a divided First Circuit panel. The en banc court stated that the criminal prosecution under Title 46, United States Code, Section 10908, was proper but concluded that the evidence adduced was insufficient to establish that Rivera knew that the vessel's condition was likely to endanger life. The court concluded that the government proved that the parting of a tow wire could pose a serious risk to human life, "but there must be sufficient evidence of a (known) defect that poses a very substantial threat to life." While the en banc opinion reversed Rivera's conviction, its language makes clear that the USCG can use this statute for criminal prosecution, without the need for a prior civil finding of unseaworthiness, as the defendant had argued.

On September 25, 1996, Bunker Group Puerto Rico, Bunker Group, Inc., and New England Marine Services were each sentenced to $25 million fines for a total of $75 million. The judge also imposed probation with numerous conditions, including a compliance program, a public notification of the conviction and sentence, and a public apology.

On January 7, 1994, 750,000 gallons of oil were spilled when the towing cable broke between the *Emily S* tugboat and the *Morris J. Berman*, the tank barge being towed from San Juan, Puerto Rico, to the island of Antigua. The barge grounded off Escambron Beach in Puerto Rico. The captain of the *Emily S* directed the crew to fashion a makeshift repair on the cable even though supplies were available on board to make a complete repair. The captain and first mate pled guilty in November 1994 and December 1994, respectively, to negligent violations of OPA. On December 9, 1994, the first mate was sentenced to one-year probation, and on May 21, 1996, the captain was sentenced to five years of probation.

UNITED STATES V. WEST INDIES TRANSPORT, INC., ET AL., 127 F.3D 299 (3RD CIR. 1997)

On October 15, 1997, the Third Circuit affirmed the

defendants' convictions for violations of the CWA, ODA, the Refuse Act, racketeering, and various visa and tax fraud offenses. Among other issues, the court rejected the defendants' argument that discharges of waste materials from a vessel did not constitute discharges from a "point source" under the CWA. The court also dismissed the defendants' contention that a permanently moored barge fit within the definition of a "vessel" under the CWA and thus qualified for the "sewage from vessels" exemption under the act.

On December 19, 1994, in St. Thomas, West Indies Transport Co., Inc.; Equipment Co., Inc.; and the owner and president of both companies were convicted by a jury on four counts under the CWA, two counts under the ODA, one count under the Refuse Act, six visa fraud counts, and a conspiracy count. A total of $12.07 million in penalties was imposed against the two companies and the president, plus a 37-month term of imprisonment for the owner of the company.

The defendants were convicted of depositing raw sewage and pollutants from dry-docking operations within 150 feet of the desalinization intake pipes of the island's municipal power plant, which produces most of the island's drinking water. The environmental violations and visa and tax fraud served as the predicate acts for the racketeering charge. The defendants brought in Filipino laborers after illegally obtaining "crewmen" visas for the purposes of doing dry-dock work on dead vessels and other shore-based operations. Besides causing the loss of jobs to U.S. citizens and tax revenues due the United States and the Virgin Islands, the foreign workers were made to live in shipping containers and to work 56-hour workweeks for wages that were far below minimum wage.

UNITED STATES V. EKLOF MARINE CORP., ET AL. (D. R.I.)

On September 20, 1997, Eklof Marine Corp. of Staten Island, N.Y.; the company's president; Thor Towing Corp.; Odin Marine Corp.; and the captain of the tugboat *Scandia* pled guilty to an Information charging them with a negligent violation of OPA by causing oil to spill into navigable waters of the U.S. The corporations also pled guilty to a violation of the Refuse Act and one count of unlawfully killing migratory birds, Title 16, United States Code, Sections 703 and 707(a).

On January 9, 1998, Eklof Marine and its owners were sentenced to pay a criminal fine of $8.5 million. Pursuant to the plea agreement with both federal and state governments, the companies admitted their criminal liability for the 826,000-gallon oil spill off Matunuck, R.I., in January 1996. According to the plea agreement, the owners additionally agreed to undertake a $1 million remedial safety program on any vessels navigating Rhode Island waters. Of the $8.5 million criminal fine, $3.5 million was paid to both the United States and to the State of Rhode Island, with $3 million of the federal fine disbursed to the Department of the Interior to carry out wetlands conservation projects, $400,000 paid for violating the Refuse Act and $100,000 disbursed to the Oil Spill Liability Trust. Another $1.5 million of the criminal fine will be paid to the Nature Conservancy to purchase and preserve land in the area around the spill. The $1 million in remedial safety measures will be enforced with an additional $1 million fine, which will be suspended pending adequate completion of those measures.

In the plea agreement, the defendants admitted that their combined negligence caused the spill when the barge *North Cape* (owned by Odin Marine) ran aground in heavy seas on January 19, 1996, and breached its hull. The defendants' negligent conduct included repeated failures to remedy discrepancy reports affecting the seaworthiness of the tugboat, and a failure to provide adequate firefighting equipment and training, despite an earlier engine room fire. The *Scandia's* captain and chief engineer both stated that the casualty occurred because the company failed to provide adequate maintenance for the vessel. The spill caused substantial environmental damage, killing marine and bird life on Rhode Island's southern coast. Eklof, Thor, Odin and the vessel's captain admitted that both the tug and barge were improperly equipped to safely navigate the stormy waters the day of the spill. The defendants also admitted that they ignored winter storm warnings on the day of the incident, thereby initiating the chain of events that led to the grounding of the barge and the discharge of over 800,000 gallons of the fuel oil cargo.

UNITED STATES V. CRESCENT SHIP SERVICES, INC., ET AL. (E.D. LA.).

On May 12, 1995, the individual officers of Crescent Ship Services ("CSS") were sentenced. President/owner of CSS, Frederick Gordon Wilhoft Jr., was sentenced to serve an eight-month split sentence and three years of supervised release for conspiracy to violate APPS and OPA. The facility manager and port captain of CSS, Lewin Pizani, was sentenced to serve a six-month split sentence and pay a $3,000 fine. Manager/dispatcher and captain at one CSS launch site, Eric Wilhoft, who pled guilty to a substantive count under APPS, was sentenced to serve six

months of home confinement and to three years of supervised release and to pay a $3,000 fine. The corporation was sentenced on May 10, 1995, in accordance with the plea agreement to pay a $250,000 criminal fine, serve five years' probation and to retain an environmental consultant approved by the government. The environmental compliance plan requires the appointment of a corporate officer who will be responsible for implementation of the environmental compliance plan and will make quarterly reports to the court. The plea agreement also requires the company to pay for any remediation or removal of buried waste oil or drums, as may be required by federal or state authorities, and five years of probation.

On January 5, 1995, Crescent, Frederick Gordon Willhoft Jr., Lewin Pizani Jr., and Eric M. Willhoft pled guilty to violations of APPS and conspiracy to violate APPS and OPA. CSS, Willhoft, Jr., and Pizani pled guilty to conspiracy to violate APPS and OPA. Eric Willhoft pled guilty to a substantive count under APPS.

Crescent Ship Services operated a river launch boat business on the Mississippi River, owns and operates 12 ships or crew boat vessels and four barges, and has four launch sites on the river. CSS crew boats routinely discharged waste oil and garbage into the Mississippi River. In addition, the boats were cleaned with a chemical dispersant immediately prior to USCG inspections and the waste oil and chemical dispersant were discharged overboard.

On July 19, 1995, the court found that Chris Smith, a CSS employee who provided the original impetus for the government's investigation, should be awarded one half of all the criminal fines in the case under the award provision of the APPS. Smith will receive $128,000 pursuant to the court's order.

UNITED STATES V. EXXON CORP. AND EXXON SHIPPING CO. (D. ALASKA)

On October 8, 1991, Exxon Corporation pled guilty to one count of the Migratory Bird Treaty Act (MBTA), and Exxon Shipping Company pled guilty to violations of the CWA, the Refuse Act and the MBTA. These criminal plea agreements were part of a global settlement that resolved criminal and civil liability among the United States, the State of Alaska, and the defendants. The corporations were sentenced to pay a criminal fine in the amount of $125 million, with $100 million remitted based on restitutionary payments to the United States and the State of Alaska. The value of the comprehensive criminal and civil settlement exceeded $1.1 billion.

A superceding indictment was filed charging Exxon Corporation and Exxon Shipping Company with violations of the CWA, the Refuse Act, the MBTA, the PWSA, and the Dangerous Cargo Act, Title 46, United States Code, Section 3718(b). The CWA violation related to the negligence of Exxon Shipping Company through the actions of its employees, which included the ship's master leaving the bridge and the failure of other crewmembers to exercise due care in executing critical maneuvers.

On March 24, 1989, the *T/V Exxon Valdez* ran aground on Bligh Reef in Prince William Sound, Alaska, puncturing a number of its cargo tanks and resulting in the discharge of approximately 11 million gallons of crude oil, the largest oil spill in the history of the United States. The oil spread through Prince William Sound, the Gulf of Alaska, and Lower Cook Inlet. More than 1,200 miles of coastline were oiled, killing a multitude of wildlife, including over 36,000 migratory birds.

UNITED STATES V. BALLARD SHIPPING CO. AND IAKOVOS GEORGUDIS (D. R.I.)

On September 29, 1989, in Providence, R.I., the Ballard Shipping Company was sentenced to a $1 million fine for one count under CWA of negligent discharge of pollutants into the Narragansett Bay. Half a million dollars of the fine is suspended, conditional on that amount being paid into two environmental trust funds administered by the State of Rhode Island. Shipmaster Iakovos Georgudis was sentenced to a $10,000 fine for the same charge.

On June 23, 1989, the Ballard Company's ship, *M/T World Prodigy*, had run aground just outside of the Narragansett Bay while en route to Providence. More than 250,000 gallons of heating oil were discharged into the coastal waters of Rhode Island, resulting in massive environmental damage.

[1] Unless otherwise noted, the statutory citations for the offenses charged in the listed cases are as follows: the Federal Water Pollution Control Act ("Clean Water Act" or "CWA"), 33 U. S.C. § 1319(c); the Oil Pollution Act of 1990 ("OPA"), 33 U.S.C. § 1321(b); the Act to Prevent Pollution from Ships ("APPS"), 33 U.S.C. § 1908(a); the Marine Protection, Research, and Sanctuaries Act ("Ocean Dumping Act" or "ODA"), 33 U.S.C. § 1411; the Ports and Waterways Safety Act ("PWSA"), 33 U.S.C. § 1232(b)(1); the Refuse Act, 33 U.S.C. § 407, conspiracy, 18 U.S.C. § 371; and material false statement, 18 U.S.C. § Section 1001.

Mystery Oil: Who Spilled It?

environmental CRIMES

The work of the U. S. Coast Guard Marine Safety Laboratory.

by Dr. Wayne R. Gronlund
Manager, U.S. Coast Guard Marine Safety Laboratory

Coast Guard field investigators frequently respond to "mystery spills," oil in the environment from no obvious source, to protect the environment from further damage and to identify the source of the spill. Their physical investigation of the scene is crucial to solving the case. One of their normal tasks is to obtain samples of the spill and samples from potential sources. These samples are subjected to forensic chemical analysis in an attempt to determine the responsible party.

Figure 1: The USCG Marine Safety Laboratory in Groton, Conn., plays an intricate part in the incrimination of environmental polluters by giving U.S Attorneys physical evidence in a court trial. Chemists at the lab are expected to testify in court about the findings in the laboratory. None of the findings from the lab have ever been refuted. All procedures are checked and double-checked for accuracy. PA3 Kelly Newlin, USCG.

The Marine Safety Laboratory (MSL) is the U. S. Coast Guard's forensic laboratory for oil spill source identification. The primary function of MSL is to conduct the chemical analyses necessary to identify the source of an oil spill in support of CG investigations. MSL exists to support field investigators and various federal, state, and local agencies by providing forensic analysis of oil samples and suspected source samples. MSL works closely with the National Pollution Fund Center and the Department of Justice in the prosecution of responsible parties (Figure 1). The analytical evidence produced by MSL provides both law enforcement and cost-recovery benefits, as MSL chemists provide expert witness testimony for hearings and court proceedings as needed.

The Marine Safety Laboratory

MSL analysis is intended to serve as a powerful tool to aid Coast Guard pollution investigators in determining the source of mystery oil spills as mandated by federal law. The lab uses several complementary chemical tests that exploit the intrinsic properties of petroleum oil and make it possible to match spilled oil with its chemical source (Figure 2). MSL analysis provides the means to ascertain the responsibility for oil pollution; assess penalties; and help recover federal pollution cleanup funds expended during an incident; and serves as a deterrent to deliberate

oil pollution discharges. It is implicit that this deterrent factor will also encourage the reporting and acceptance of responsibility for accidental spills.

In addition to its primary mission, MSL is tasked to:

- Provide consultation to field investigators, District offices, hearing officers, National Pollution Fund Center, Department of Justice, and other federal agencies concerning the Oil Identification System and MSL analysis reports.
- Provide expert opinions and testimony at legal proceedings as required.
- Maintain a system of adequate quality controls to assure the integrity of the Oil Identification System.
- Evaluate new methods and advancements in technology that may increase the accuracy, reliability, and efficiency of the Oil Identification System.
- Participate in activities that enhance the credibility and legal acceptance of MSL analyses, including membership in the American Society for Testing and Materials (ASTM).
- Provide long-term secure storage of oil samples (i.e., evidence) that MSL has received from field units in support of oil pollution cases.

Figure 2: USCG Marine Safety Laboratory analysis is intended to serve as a powerful tool to aid Coast Guard pollution investigators in determining the source of mystery oil spills as mandated by federal law. PA3 Kelly Newlin, USCG.

Background, History of the Laboratory

In 1972, the Federal Water Pollution Control Act (FWPCA) assigned general responsibilities to the Coast Guard for the protection of the marine environment in the United States, including enforcement of the nation's anti-pollution discharge laws and regulations. To carry out these responsibilities, it became necessary to develop a system to identify pollutant sources. The Coast Guard Research and Development Center was tasked with this project in 1973. Over the next four years many analytical tests and procedures were evaluated for their ability to distinguish among all types of petroleum oil. In 1977, the R&D Center published its final report in the National Technical Information System (NTIS) detailing the "Coast Guard's Oil Spill Identification System." The Central Oil Identification Laboratory (COIL) was established in November 1977 to implement the system and was located within the R & D Center facilities in Groton, Conn.

One of the first steps for COIL and the new Oil Identification System was to set legal precedent for its "oil fingerprinting" technique. This occurred in December of 1978 at a federal criminal jury trial, under the Federal Water Pollution Control Act, involving spilled oil. In this case, *U.S. vs. Distler*, Judge Charles M. Allen ruled that "chemical evidence" would be admissible, thereby establishing the necessary legal precedent.

In 1979 administrative control of COIL was transferred to the Coast Guard Oceanographic Unit in Washington, D.C., and a new lab was constructed from existing Oceanographic Unit space at the Washington Navy Yard Annex. However, COIL operations under the Oceanographic Unit were to be short-lived when the unit was closed in April 1982. At that time COIL became the fifth branch of the Port and Environmental Safety Division, Office of Marine Environment and Systems (G-W).

COIL moved to its present location in Groton, Conn., in 1986. In 1988, COIL and the Marine Fire and Safety Research Staff were merged to form the Coast Guard Marine Safety Laboratories. During 1991, control of the Marine Fire and Safety Research program was returned to the Coast Guard R&D Center and COIL became the Marine Safety Laboratory.

Figure 3: Petty Officer 3rd Class Logan Brien, a marine science technician at the USCG Marine Safety Laboratory, prepares oil samples. PA3 Kelly Newlin, USCG.

As part of the Coast Guard's streamlining initiatives in 1996, the laboratory's top leadership position was converted from a Commanding Officer to a Coast Guard civilian supervisory chemist with the title of Manager. MSL is currently a sub-unit of the National Maritime Center (NMC). Planning is presently underway to move MSL under the Coast Guard's Office of Investigations and Analysis (G-MOA).

Overview of Oil Spill Identification Methodology

The Oil Spill Identification System (OIS) uses the unique, intrinsic properties of petroleum oil that make it possible to match spilled oil to the correct chemical source (Figure 3). The system is based on multiple analytical methods. Of the original four techniques developed and evaluated for the OIS, two are still used: gas chromatography (GC) and infrared spectroscopy (IR). Fluorescence spectroscopy (FL) and thin layer chromatography (TLC) are no longer used by MSL. As a result of the development of increasingly sophisticated and powerful analytical instrumentation, gas chromatography-mass spectrometry (GC-MS) has been added as the most powerful analytical technique available for the task.

These analytical methods measure different chemical properties of an oil sample. If two oils are chemically similar, they are said to derive from a common source. In nearly every case, oils from other suspected sources will be simultaneously eliminated from consideration as the pollutant source because they are chemically different, as determined by the test methods.

Interpretation of the analytical test results is not always straightforward because of increased analytical complexity brought about by weathering or contamination of the spilled oil. The term *weathering* includes such actions as: evaporation; dissolution; biodegradation; oxidation; and other chemical, physical, and biological environmental changes that alter the makeup of the spilled oil. The degree of weathering will vary with each particular case, and this can significantly complicate the analyst's job (Figure 4).

MSL prepares a written analysis report for each case. The report is a self-contained document that includes the expert opinion of a trained chemist such as Kristy Juaire, ScM, who has a master's degree in geochemistry from Brown University and has been at MSL for three years. The report consists of a forwarding letter; laboratory report with results and conclusions; sample check-in log; case docu-

Figure 4: Marine Science Technician 1st Class Steven Natale has been at the USCG Marine Safety Laboratory for almost four years. "It takes almost two years to become completely qualified in this lab. However, we are only one of few billets in the Coast Guard that is a science-oriented billet," said Natale. PA3 Kelly Newlin, USCG.

mentation (analysis request, chain-of-custody, etc.); quality assurance sheet; cost-recovery documentation; worksheets and the original test data.

Techniques Used to Analyze Oil

Gas chromatography (GC) separates the components of an oil primarily on the basis of their boiling points. The separation is carried out under controlled conditions such that the same component will be eluted from the gas chromatographic column at the same relative time for all samples. The separated components are sensed by a flame ionization detector and simultaneously recorded electronically. Interpretation of evaporative weathering is relatively straightforward, because it affects components in the same sequence as they are displayed graphically.

Gas chromatography-mass spectrometry (GC-MS) uses a mass selective detector to continuously collect the mass spectrum for the components eluting from the GC. The mass spectrum, reflecting the ion fragments present, can be used to conclusively identify individual components. For oil identification, selected target ions representing biomarkers in the oil are selected. These biomarkers are components unique to petroleum oils; their ratios are used to characterize individual oils. Because some are highly resistant to biodegradation and other weathering, severely weathered oils that cannot be identified by other means can often be matched by GC-MS.

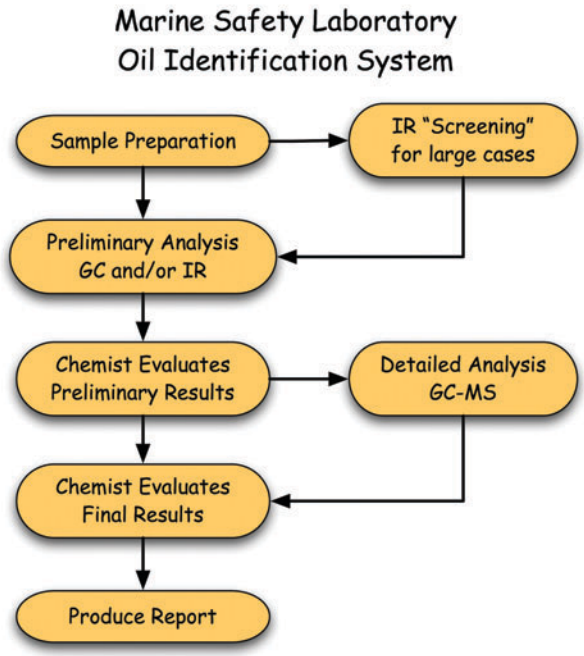


Figure 5: USCG Marine Safety Lab Oil Identification System.

Infrared spectroscopy (IR) uses the absorption of infrared energy over a spectral region that corresponds to the bond stretches and vibrations of the molecules that form the oil. A number of absorptions are common to all petroleum oils. These absorptions allow the analyst to identify the sample as a petroleum product. Other absorptions are used for uniquely identifying specific oil samples. Comparison of the infrared spectra, taking into account weathering differences, is sometimes used to eliminate dissimilar sources from further analysis (Figure 5).

What Do the Results Mean?

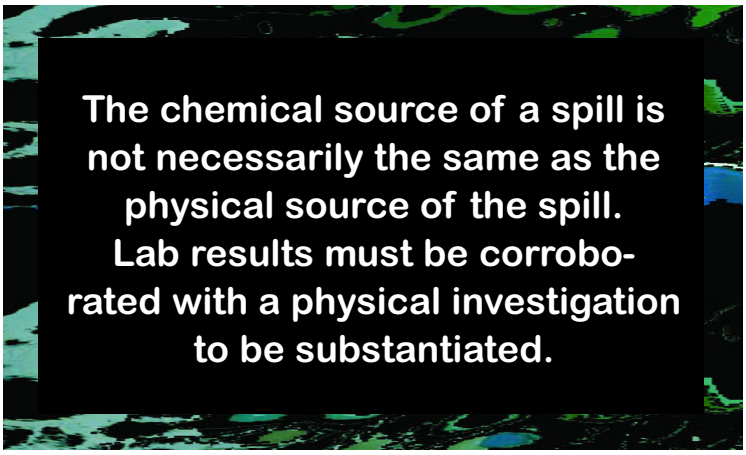
When MSL's report says samples "match," it will specify, for example, that Spill X and Source Y "are derived from a common source." That means they both came from a common chemical source of petroleum oil. Our analytical lab testing cannot prove the physical source of the oil (Figure 6).

Let's use a simplified example of an actual MSL case to demonstrate what this means. The lab receives three samples for analysis: one from the spill (unweathered fuel oil) and two from different suspect sources (both also unweathered fuel oils). The lab reports a "perfect match" between Suspect Source A and the Spill C. Suspect Source B is a clear "non-match" with the Spill C. But, based on his observations at the scene, the field investigator is

convinced that Suspect Source B is the responsible party. In reality, both the lab and the field investigator are correct! How can that be true?

A thorough review of all the paperwork (original sample collection labels, chain of custody, sample preparation documents, etc.) is conducted and does not uncover any errors or inadvertent mix-up of samples. Lab analysis and interpretation of results were repeated with the same conclusion: Source A matches Spill C and Source B does not match.

Armed with this apparent paradoxical result, the field investigator gathered more information. Suspect Source B was found to have had a previously unreported tank rupture that was subsequently repaired and the tank was refilled. Prior to the rupture, both A and B had been filled from the same fuel oil supply. After the leak was repaired, B was refilled from a different fuel oil supply.



Conclusion: The chemical source of a spill is not necessarily the same as the physical source of the spill. Lab results must be corroborated with a physical investigation to be substantiated.

Improving the Overall Process

MSL provides on-call assistance to Coast Guard field investigators, District personnel, Hearing Officers, NPFC, DOJ, and other government agencies on all aspects of the Oil Identification System. This assistance includes but is not limited to:

- Answering questions and explaining the significance of test results.
- Evaluating test data from other laboratories.
- Providing expert witness support.
- Planning sampling strategies in complex cases.

An effective Oil Identification System depends upon good communication and understanding between the various users of the system and Marine Safety Lab personnel. Please give us a call—we're eager to help!

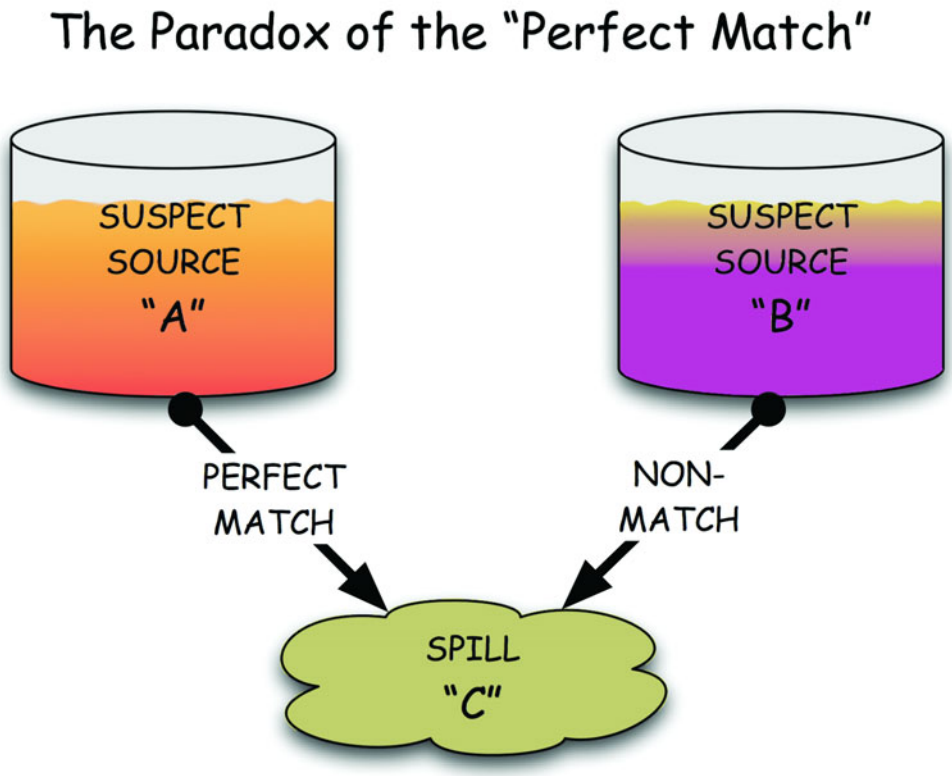
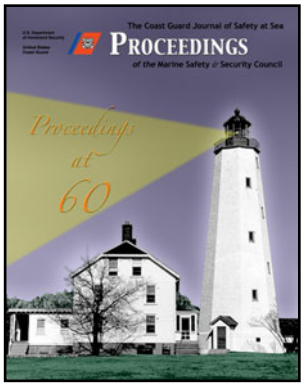
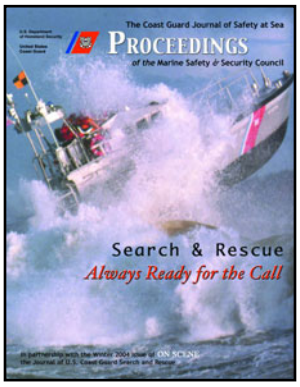


Figure 6: The USCG Marine Safety Laboratory reports a "perfect match" between Suspect Source "A" and the Spill "C" — but, based on his observations at the scene, the field investigator is convinced that Suspect Source "B" is the responsible party. In reality, both the lab and the field investigator are correct!

PROCEEDINGS Wants You ...





... to Join its Esteemed List of Authors!

The editors of Proceedings of the Marine Safety & Security Council would like to hear from you!

U.S. Department of Homeland Security

United States Coast Guard

The Coast Guard Journal of Safety at Sea

PROCEEDINGS

of the Marine Safety & Security Council

Do you have a suggestion about improving the magazine, an article idea, or a neat photo to share? If so, please contact Executive Editor Lisa Bastin at:

- e-mail: NMCProceedings@ballston.uscg.mil
- Phone: (202) 493-1052
- Mailing Address: U.S. Coast Guard, *Proceedings* Magazine, 4200 Wilson Blvd., Suite 730, Arlington, VA 22203-1804

If you have a finished article ready to send, please note that completed articles are typically 1,200 to 1,800 words. Photos should be sent separately from the article, as .jpg files that are 300 dpi.

We look forward to hearing from you soon, and we hope you have enjoyed this issue of **PROCEEDINGS**!

Improving Environmental Performance

Developing an environmental management system.

by Ken Olsen
U.S. Coast Guard Office of Investigations and Analysis

Commercial vessel owner/operators have several options to improve environmental performance throughout their organization and in establishing an effective environmental compliance program (ECP). An ECP can be based on the International Organizations for Standardization (ISO) ISO 14001, the International Safety Management Code (ISM), or could contain various elements from the United States Federal Sentencing Guidelines for Organizations. Elements from any of these standards could be combined in various ways.

Ultimately, the ECP may include an environmental management system (EMS) that becomes essential to the organization's day-to-day operations. Generally, the use of an EMS that documents corporate policies and procedures, the use of outside consultants to access performance, the implementation of non-regulatory practices, and other efforts may go a long way to ensure effective compliance with existing domestic and international environmental requirements.

Environmental Management Systems

Environmental management systems may vary based on how they are developed but will contain similar components. An EMS is a continual cycle of planning, implementing, reviewing, and improving the processes and actions that an organization undertakes to meet its business and environmental goals. Most of these systems are built on Plan, Do, Check, Act, a quality management principle. The model results in continual improvements based upon:

- Planning, including identifying environmental aspects and establishing goals [plan]
- Implementing, including training and operational controls [do]
- Checking, including monitoring and corrective action [check]
- Reviewing, including progress reviews and acting to make needed changes to the EMS [act].

Some systems may be more comprehensive than others. For informational purposes only, the following list is provided for owner/operators who have already developed an EMS and may be used to evaluate the comprehensiveness of their existing systems. As listed on the Environmental Protection Agency's (EPA) Environmental Management Systems' Web site at http://www.epa.gov/ems/index.htm, key elements of the EMS include:

- Environmental policy: A statement of an organization's commitment to the environment.
- Environmental aspects: Identifies environmental attributes of products, activities, and services.
- Legal and other requirements: Identifies and ensures access to relevant laws and regulations, as well as other requirements applicable to a business.
- Objectives and targets: Establishes environmental goals for the organization, in line with existing policy, environmental impacts.
- Environmental management program: Plans the actions necessary to achieve objectives and targets.

BEFORE **AFTER**

Figure 1: Before and after installation of an oily water separator bypass.

- Structure and responsibility: Establishes roles and responsibilities for environmental management and provides appropriate resources.
- Training, awareness, and competence: Ensures that employees are trained and capable of carrying out their environmental responsibilities.
- Communication: Establishes processes for internal and external communications on environmental management issues.
- EMS documentation: Maintains information on EMS and related documents.
- Document control: Ensures effective management of procedures and other system documents.
- Operational control: Identifies, plans, and manages operations and activities in line with policy, objectives, and targets.
- Emergency preparedness and response: Identifies potential emergencies and develops procedures for preventing and responding to them.
- Monitoring and measurement: Monitors key activities and tracks performance. Conducts periodic assessments of compliance with legal requirements.
- Nonconformance and corrective and preventive action: Identifies and corrects problems and prevents their recurrence.
- Records: Maintains and manages records of EMS performance.
- EMS audit: Periodically verifies that your EMS is operating as intended.
- Management review: Periodically reviews your EMS with an eye to continual improvement.

Environmental Consultants

Third-party environmental consultants, auditors, and inspectors contracted to uncover systemic shipboard problems related to waste management and processing may reveal some of the circumstances that lead to illegal discharges. When such consultants are engaged, owner/operators should not limit the scope of auditing or inspection to just established criteria within a management system or procedures under evaluation. That way, the causal factors relating to excessive waste stream development, inadequate processing equipment, storage, or the failure to process may be more easily discovered.

The identification of various crossovers, bypasses (Figure 1), and methods to discharge illegally (Figure 2) could remain undetected because of the difficulty in identifying system modifications. Such inspections require extensive tracing-out of com-

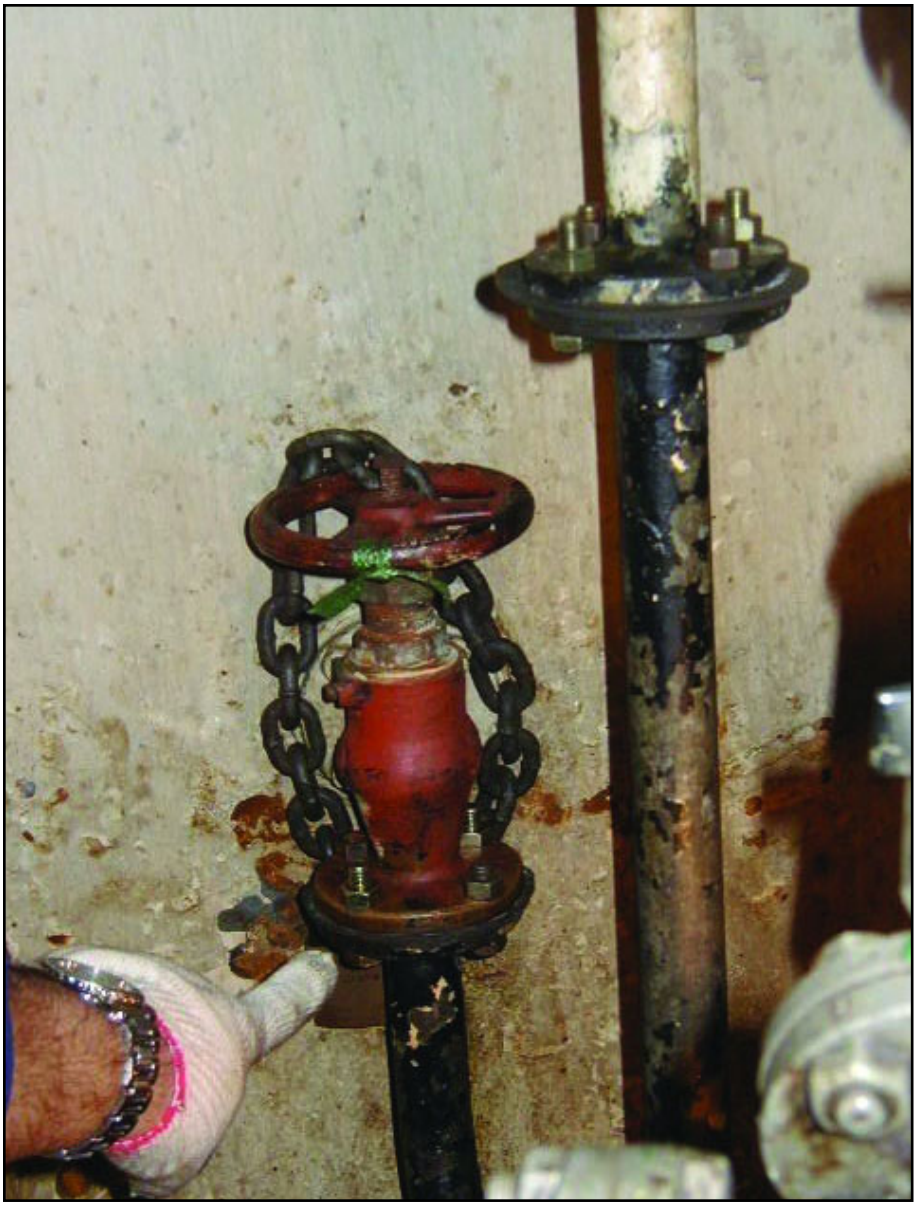


Figure 2: Example of suspicious overboard piping.

plex systems, are time-intensive, and require persons with marine engineering knowledge to compare the systems against approved plans and to evaluate human performance and procedures. For this work to be effective and to make accurate determinations as to the quantity of wastes developed onboard, the conditions must be observed while the vessel is seagoing. Otherwise, the status of different systems, processes, and actual circumstances contributing to waste development will be unobserved.

Illegal procedures or deliberate acts of dumping are highly unlikely to occur when auditing and inspection personnel are onboard. Since inappropriate procedures are not documented, the detection of either improper actions by crewmembers or the improper use of systems remains difficult. Yet, if the consultants gain a comprehensive understanding of the shipboard conditions, including detailed evaluations of waste accumulations, bilge loading, and actual processing capabilities of the equipment involved, they should be able to inform the owner/operator precisely about critical issues and make an accurate determination as to potential for illegal activities occurring. Additionally, the consultant should be able to provide recommendations regarding resources needed for effective corrective action, the implementation of preventative controls, specific modifications to an existing EMS, or establishing a need for developing a completely new system.

Non-Regulatory Practices

Regarding pollution prevention and environmental compliance, a number of non-regulatory practices have been identified to improve machinery space operations:

- Numbered seal program to track and record the openings and closings of crossover valves, piping systems, and other components of systems related to bilge, oil wastes, and sludge management.
- Warning signs, locks, or seals at crossovers and independent connections that are capable of handling unmonitored discharges.
- Installation of piping modifications that allow full operational testing of the oily water separator (OWS) and oil content meter (OCM) in port without any risk of discharge.
- Key switch operated control to allow flushing water to an OCM only when the switch is manually held in place. Switch may also secure overboard discharge valve when activated.
- Comprehensive OWS and waste management monitoring systems having sensors at pumps, tanks, and equipment to monitor and record all conditions, times, and outputs.
- Tank sounding sheets used on a daily or per-watch basis, which capture and record fluid levels of all tanks associated with bilges and waste oil management.
- Logs for all equipment having oil-to-sea interfaces to record all oil added to the systems.
- Removal of flanges and connections to nowhere on any system that is capable of directing its contained fluid overboard.
- Sampling of fleets/vessel bilges, analysis and coordination with OWS and OCM manufacturers to determine the adequacy of existing equipment to process fluids with identified contents.
- Consultation with vessel engineers regarding bilge loads, sludge accumulations, storage capabilities, and the performance of pollution prevention equipment.

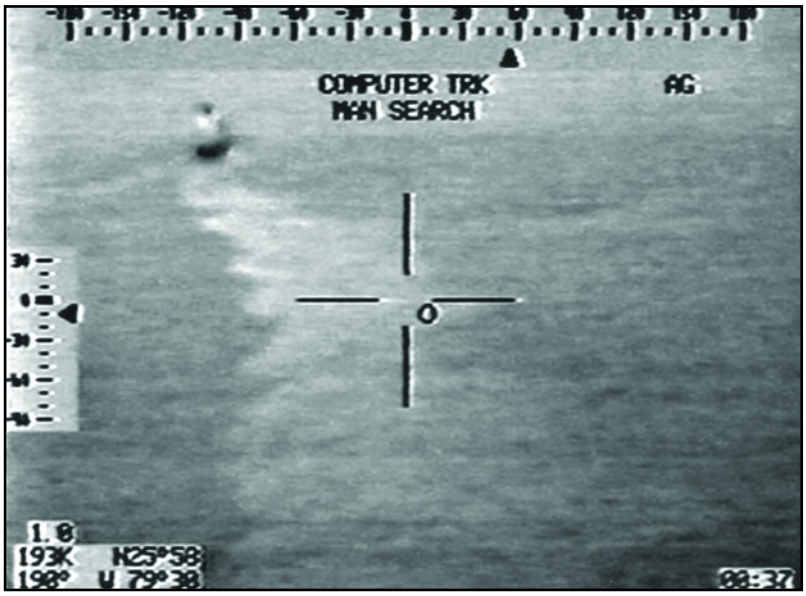


Figure 3: Video image of a vessel leaving a trail of oil in its wake, caught by a Coast Guard surveillance overflight.

Conclusion

Occasionally, in routine marine casualty investigations, it is discovered that the causal factors contributing to a particular incident are known by shipboard and shoreside personnel prior to the incident occurring. Likewise, in environmental crime investigations, knowledge of a particular shipboard environmental problem typically exists within the organization before any investigation begins. Consequently, the best effort some organizations can make is to improve environmental performance on the basis of what they may already know.

Those occasional owner/operators or crewmembers who engage in illegal activities should cease believing that illegal discharges will go undetected simply because of the expansiveness of the oceans on which their ships sail. The growing cooperation and active working relationships between various governments and federal and domestic agencies have resulted in extremely effective investigatory capabilities. The ability of these organizations to combine their different resources leads to successful investigations and prosecutions that seldom go to trial. Special technologies, advanced surveillance methods (Figure 3), and human factors—such as the unique knowledge and skills of the shipboard inspectors, special agents, technical advisors, analysts, and attorneys of the investigation and prosecution team—should be a deterrent for any organization or individual failing to comply with domestic and international environmental requirements.

Illegal Sewage Discharges

environmental CRIMES

The enforcement of the Refuse Act.

by Dawn Kallen
Marine Investigator, U.S. Coast Guard Group/Marine Safety Office Long Island Sound

Coast Guard personnel are becoming more proficient at detecting environmental crimes involving the improper use/bypass of oily water separators on vessels. Investigation methods and techniques are being shared through various training avenues, resulting in successful prosecution of these types of violations. However, there is another type of environmental crime Coast Guard personnel should aggressively investigate when presented with evidence of violations. This pollutant may not be as flashy or glamorous as a petroleum product, but it is just as important. I'm referring to the illegal discharge of raw sewage from vessels.

The Federal Water Pollution Control Act specifically exempts sewage from a vessel from the definition of a pollutant.

The argument that raw sewage discharged from vessels is minor compared to other sources of pollution is weak at best. The facts are clear: Raw sewage from a vessel's holding tank is more concentrated and biologically active than treated sewage released from vessels or wastewater (sewage) treatment facilities on shore. Studies show that raw sewage from vessels contains disease-carrying bacteria that can transmit diseases to swimmers and damage shellfish beds.

As you would expect, these types of violations are extremely difficult to catch. The best chance a Coast Guard investigator has to detect this type of illegal activity is to either receive a tip or to catch the violator in the act of discharging raw sewage in a prohibited zone, such as the waters of the territorial sea or other prohibited locations such as rivers, lakes, or estuaries.

Marine Sanitation Devices

It is important for investigators to understand the differences among Type I, II, and III marine sanitation devices (MSDs). Type I

Figure 1: Type III holding tank. Dawn M. Kallen, USCG.

and II MSDs are Coast Guard-approved. Type III MSDs are self-certified. A Type I system is a flow-through discharge device and is commonly a physical/chemical type (macerator/chlorinator). A Type II system is a flow-through discharge device and is commonly a biological (aerobic digestion) system, but several physical/chemical types are certified as Type IIs. A Type III system is typically designed to prevent the overboard discharge of treated or untreated sewage, or any waste derived from sewage. Most Type III systems are holding tanks (Figure 1), but there are also Type III vacuum collection systems, incineration systems, recirculation systems, and composting systems.

Vessels 65 feet in length and under, with installed toilets, must have an operable, certified Type I, II, or III device. Vessels over 65 feet in length with installed toilets must have an operable, certified Type II or III device. Vessels over 65 feet in length are permitted to have Type I devices installed only if the construction of the vessel was begun on or after January 30, 1975, and the MSD was installed prior to January 31, 1980; or if the construction of the vessel was begun before January 30, 1975, and the MSD was installed before January 31, 1979. Specific carriage requirements are found in 33 Code of Federal Regulations (CFR) § 159.7.

Documentation

If a Marine Safety Office receives a tip that a vessel is discharging raw sewage in a prohibited area, the officer should immediately launch personnel to investigate. There may not be an active discharge occurring when the investigators arrive. The investigators will have to develop the evidence that a discharge has taken place. Investigators should focus on the overboard discharge valve (Figure 2) and gather photographic evidence of the status of the valve(s) and the physical evidence of a sewage discharge in the water, if possible.

In a Type III system, the overboard discharge valve must be adequately secured to prevent all discharges of raw sewage. Methods to secure the valve include the use of a padlock, a non-releasable wire-tie, or removal of the valve handle altogether.

Interviews with vessel personnel may reveal details such as how long the vessel has been discharging raw sewage and who ordered the operation. If the sewage system on board the vessel is a Type III with a holding tank, the investigators should identify the regular sanitation company that empties the holding tank and subpoena all the records for the previous year. These documents could identify a pattern of illegal discharges and/or establish a pattern of regular pump-outs (Figure 3).

In addition, if the vessel is fitted with a Type III MSD, the investigator should determine if and how often the vessel operates seaward of the territorial sea, or waters where untreated sewage can legally be discharged. This is particularly important when determining whether the frequency that the MSD is pumped out by a sani-

Figure 2: Overboard discharge valve. Dawn M. Kallen, USCG.

Figure 3: Holding tank pump-out. Dawn M. Kallen, USCG.

tation company seems to be reasonable. Volume II of the *Marine Safety Manual* is an excellent source of information for determining whether the capacity of an MSD is adequate for the vessel's service. Making such a determination could be important evidence for establishing whether a violation could have occurred.

Marine inspectors who have attended the vessel in the past may also be important sources of information, particularly with respect to determining whether the method used to secure the valve is consistent with what has been observed in the past.

When is a Violation Not a Violation?

Recently, the U.S. Court of Appeals for the Eighth Circuit ruled that it is not a criminal violation of the Federal Water Pollution Control Act (FWPCA) for a vessel to discharge raw sewage into waters of the United States. The FWPCA specifically exempts sewage from a vessel from the definition of a pollutant. So what avenues do we have to pursue these types of violations?

Discharge of raw sewage is a violation of the Rivers and Harbors Refuse Act of 1899, 33 United States Code (USC) § 407 and § 411. This law prohibits the discharge of refuse matter of any kind from vessels into the navigable waters of the United States. Violations of the Refuse Act are criminal in nature (misdemeanor offense); there are no provisions for civil penalties. The penalties for proven violations of the Refuse Act include fines up to $25,000 a day and/or imprisonment for not less than 30 days up to 1 year. In addition, vessel operators and crew may be charged with making false statements to Coast Guard personnel, which is a violation of 18 USC § 1001.

Investigators must immediately engage their local District marine safety, legal, and Coast Guard Investigative Services (CGIS) office when criminal investigations may be warranted. This will ensure coordination of investigation activities within the Captain of the Port zone. Additionally, notifications should be made to the state agency with jurisdiction for pollution events in the coastal zone.

The prosecution of raw sewage discharge under the Refuse Act is an innovative approach and is offered for consideration without reference to supporting case law.

environmental CRIMES

Someone Will Report

Guidance for crewmembers.

by Ken Olsen
U.S. Coast Guard Office of Investigations and Analysis

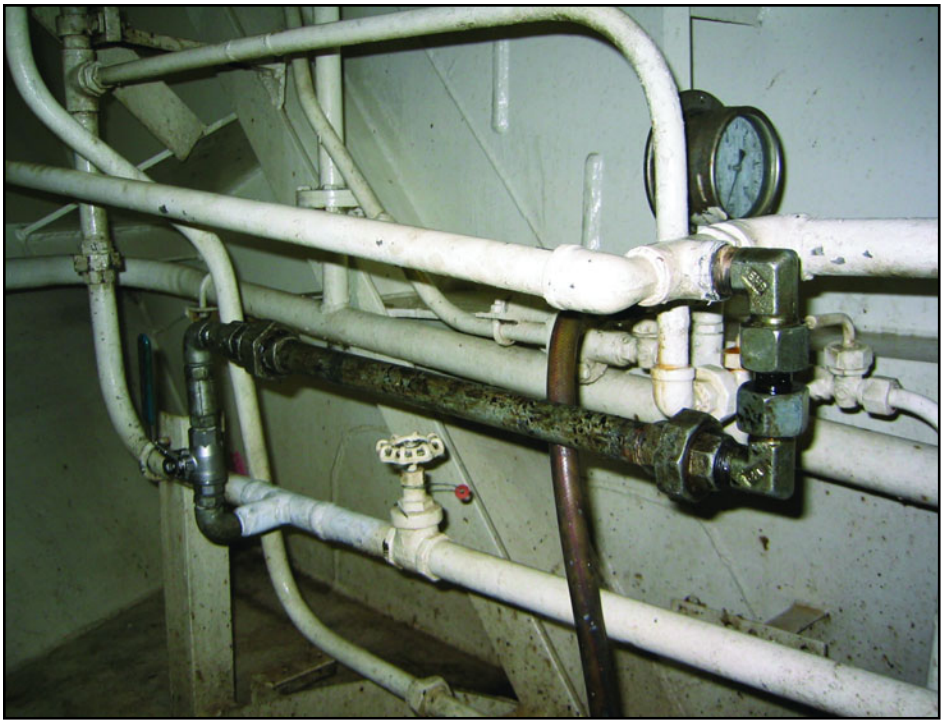


Figure 1: An example of an installed bypass used for deliberate discharges.

There are a number of reasons why wastes are illegally discharged overboard. More often then not, these events occur at the direction of senior shipboard engineering personnel who manage machinery space processes. Unwritten evolutions beyond those detailed in management systems may take place when the vessel is at sea. The basis for procedures that include deliberate discharges (Figure 1) rests in the expansiveness of the oceans and may also be related to organizational economic policies, inadequate pollution prevention equipment, or limited storage capabilities for bilge and oily wastes.

In some instances at the direction of a senior engineer, lower level officers or crewmembers are required to perform illegal tasks associated with the handling of oily wastes. Such situations place the tasked individual in a very

In some instances at the direction of a senior engineer, lower level officers or crewmembers are required to perform illegal tasks associated with the handling of oily wastes. Such situations place the tasked individual in a very uncomfortable position.

uncomfortable position. The individual may believe that by refusing involvement his or her job may be at stake. Shipboard peer pressure, especially in light of the work environment, may contribute to a person's willingness to cooperate. These concerns, as well as many others, may be the deciding factors that cause a mariner to cooperate.

Eventually, an investigation will begin. The ship will be boarded, evidence collected, interviews performed, and lawyers hired, which will cause a significant financial impact to the owner/operator.

Nevertheless, the only action for any mariner to take when put in a circumstance involving unlawful activity is to refuse participation. Regardless of who is asking or directing the procedure, the individual should immediately report it to the master of the vessel. The master is the owner/operator's senior representative and should make every effort to prevent the discharge and resolve the associated operational issues.

If the crewmember determines that the master has failed to take action and discharges are allowed to continue or if threats of any kind are suggested against the individual for reporting the problem, then he or she should as promptly as possible report the problem to the U.S. Coast Guard or other authorities. Shipboard employees who are not tasked to participate in an unlawful activity, but who witness one, should take similar steps to prevent the discharge.

In rare instances where senior shipboard personnel are pressured by shoreside personnel to cut expenses related to environmental management, reduction of waste streams, or pollution prevention equipment, that individual must not concede to their demands. He or she should document such communications and make every attempt to prevent illegal discharges regardless of the costs or potential consequences. As needed, he or she should inform the representative that such pressures could result in environmental violations and that, if proper corrective actions are not taken, he or she will inform the authorities.

The maritime culture presents a significant deterrent for persons who choose to violate environmental laws or regulations. Anyone who has ever sailed a merchant vessel knows that crewmembers have plenty of time to talk. Scuttlebutt abounds. Add the natural division between officers and crew, differences between nationalities, and individual personalities, and it becomes extremely likely that, if there is something illegal going on, a number of people onboard will know.

Eventually, someone will take action. He or she recognizing the unlawful nature of the activity will make a report. It might be a note passed to an inspector in the ship's passageway, an email, a fax, a telephone call, or a comprehensive package full of photographs, documents and schematics sent to an authority. Eventually, an investigation will begin. The ship will be boarded, evidence collected, interviews performed, and lawyers hired, which will cause a significant financial impact to the owner/operator. All this occurs long before an almost guaranteed conviction, substantial fine, and possible jail term for those involved. Everyone participating in unlawful discharge activities should remember that it is just a matter of time before they are caught.

The only action for any mariner to take when put in a circumstance involving unlawful activity is to refuse participation. Regardless of who is asking or directing the procedure, the individual should immediately report it to the master of the vessel.

Environmental Compliance and Homeland Security

Environmental regulations do not just apply to the private sector. Government agencies, including the Coast Guard, must also comply with environmental protection rules.

by Lt. Curtis Borland
U.S. Coast Guard Office of Environmental & Real Property Law

Within the sphere of environmental compliance requirements, there is a dynamic tension between the role of the military operator and that of the environmental program manager. This tension results from the operator's need to aggressively respond to rapidly changing conditions and emerging threats, and the environmental program manager's need to analyze environmental effects of agency actions. After the September 11, 2001, attacks on the United States, the Coast Guard, the nation's only multi-mission maritime law enforcement agency, responded by redefining its mission priorities.

The Commandant of the Coast Guard has emphasized that it is incumbent on our operations personnel to be proactive with regard to environmental protection.

As the Commandant of the Coast Guard said shortly after the attacks: "We are now faced with the urgent and important need to attend to issues of homeland security, which has been thrust to the forefront of our missions. The Coast Guard is a unique instrument of national security. We are more sure than ever that no other Service or Agency is so well equipped and prepared to provide the maritime security that our nation so desperately needs from us."[1] This article examines how the Coast Guard's change in mission priorities highlights the tension between environmental compliance and implementation of effective maritime homeland security strategies.

As the Coast Guard evolves from a service-oriented agency providing environmental response, search and rescue, and maintenance of aids to navigation services into an agency with an enhanced focus on military operations, port security, and prevention of terrorism, compliance with environmental laws becomes increasingly important. Where specific credible intelligence of an imminent hostile action exists, Coast Guard personnel are called upon to implement security zones around high-value targets and deploy all available tools to counter the potential threat. Our Service is developing new technologies that will minimize the risk of successful attack on our nation's maritime infrastructure. Failure to proactively address the environmental impacts of new technologies, redeployment of existing forces, deployment of newly established forces, and the soon-to-be fielded Integrated Deepwater System may have a significant adverse effect on the Coast Guard's ability to train and operate.

Environmental Management

Agency environmental staff and lawyers help to ensure that, before engaging in activities that may have a significant effect on the environment, the Coast Guard conducts the appropriate environmental analysis to ensure that the impact is considered prior to making a final decision or expending funds. Effective environmental management requires extensive coordination among all directorates with program oversight. However, essential coordina-

tion can be stymied by the "stovepipes" that delay communication between interested parties.

To overcome bureaucratic inertia and relieve the tension between military operations and environmental compliance, environmental staff must proactively engage their customers to assess what initiatives are being undertaken, what new technologies are in the research, development, test and evaluation (RDT&E) pipeline, and what activities are being prepared for immediate implementation. This hands-on approach also allows environmental attorneys to appropriately advise their clients on the compliance requirements of environmental laws. Fully integrated management ensures that program managers communicate with their counterparts in other Coast Guard directorates and other federal, state, and local agencies and with citizens who may have an interest in the particular activity.

"Environmental Stewardship is essential to sustain the public's trust in the Coast Guard as a premier Homeland and Maritime Security agency."

Commitment to Environmental Protection

The Commandant of the Coast Guard has emphasized that it is incumbent on our operations personnel to be proactive with regard to environmental protection. The Commandant's Environmental Stewardship Challenge lays out the Coast Guard's commitment to environmental protection. In it, the Commandant "commit[s] Team Coast Guard to ensure that environmental considerations are incorporated into all future actions and missions. Environmental Stewardship is essential to sustain the public's trust in the Coast Guard as a premier Homeland and Maritime Security agency." This statement reflects the importance that the Coast Guard's chain of command places on environmental protection in the context of mission accomplishment. The twin goals of effective environmental stewardship and maritime homeland security are not mutually exclusive but, rather, must be considered compatible aspects of seamless Coast Guard operations.

As operations management develops new weapons systems, promulgates new security regulations, and expands the Coast Guard's presence throughout the maritime domain, environmental managers and lawyers must ensure that compliance considerations are factored into the process from the very beginning. This is of paramount importance because failure to comply can result in a complete shutdown of a particular program. Most environmental laws incorporate citizen suit provisions that allow aggrieved parties to sue the government. Such suits can lead to court-issued injunctions until the agency can demonstrate an appropriate level of compliance. Many environmental laws also carry civil and criminal sanctions, and government employees are at risk if they commit violations by not completing the required environmental analysis or consultation.

National Environmental Policy Act

The National Environmental Policy Act (NEPA), 42 U.S.C. §§ 4321–4370f, is the umbrella under which all federal environmental compliance activity falls. NEPA requires that federal agencies "include in every recommendation or report on proposals for legislation and other major federal actions significantly affecting the quality of the human environment, a detailed statement by the responsible official on – (i) the environmental impact of the proposed action, (ii) any adverse environmental effects which cannot be avoided should the proposal be implemented, (iii) alternatives to the proposed action, (iv) the relationship between local short-term uses of man's environment and the maintenance and enhancement of long-term productivity, and (v) any irreversible and irretrievable commitments of resources which would be involved in the proposed action should it be implemented."[2]

This powerful statute imposes a pre-decisional duty upon all federal agencies to assess the impact of their actions on the environment. NEPA's implementing regulations, found at 40 C.F.R. §§ 1500 – 1508, specify three different types of analysis: (1) actions that are "categorically excluded"[3] from further environmental analysis; (2) actions where, after an "environmental assessment,"[4] there is a "finding of no significant impact;"[5] and (3) the comprehensive "environmental impact statement"[6] level of analysis.

NEPA compliance provides federal agencies with the necessary information to make informed decisions as to the environmental effects of proposed actions. It "requires agencies to take a hard look at the full range of consequences of their planned action and to consider alternatives to their planned action."[7] NEPA is a procedural statute; it does not prescribe any particular outcome, only that "federal agencies [] follow cer-

tain procedures to ensure environmental due process before undertaking any proposed action."[8]

Failure to fully comply with the dictates of NEPA can result in adverse effects on training activities, mission readiness, and the Coast Guard's ability to effectively counter threats to our nation's maritime infrastructure. Unlike certain other environmental statutes, NEPA does not incorporate a national security exemption.[9] Agencies that proceed with actions where significant environmental impact may occur, have an affirmative duty to analyze these effects and examine reasonable alternatives prior to engaging in the activity.

Washington County v. Navy

The consequences of failing to comply with NEPA is best illustrated by examining a recent case that involved the U.S. Navy's planned action to construct a training airfield in eastern North Carolina. In *Washington County, North Carolina et al. v. United States Department of the Navy*,[10] plaintiffs filed suit, seeking a preliminary injunction to stop the Navy from developing an Outlying Landing Field (OLF) in eastern North Carolina.[11] Of the several allegations made by plaintiffs, the court focused primarily on whether the Navy satisfied its duty to take a "hard look" at the environmental impacts of the OLF construction and associated flight operations under NEPA.

In considering whether to issue a preliminary injunction, the court used a three-pronged test. The first step required the court to "balance the likelihood of irreparable harm to the plaintiff against the likelihood of harm to the [Navy]" if the injunction were granted.[12] The court determined that, because the Navy had not commenced land acquisition or construction contracting and a reasonable alternative to continue training existed, the harm it would suffer as a result of a preliminary injunction was minimal. However, the court found that the harm plaintiffs alleged—adverse impacts on migratory bird species at the adjacent Pocosin Lakes National Wildlife Refuge and the permanent dislocation of some 100 Washington County and Beaufort County residents—was substantial. If the Navy was allowed to proceed with land acquisition and construction, the procedural process required by NEPA would be irreparably biased in favor of completion of the OLF, making it difficult for the court to "compel the Navy to reverse course" in the event that, after a trial on the merits, it found the Navy had failed to comply with its NEPA obligations. The court ruled that "the relative quantum and quality of plaintiffs' likely irreparable harm in relation to the relatively small harm to the Navy lead the court to conclude that plaintiffs have satisfied their burden...by demonstrating irreparable harm that weighs in their favor."[13]

In NEPA lawsuits against federal agencies, courts use the "arbitrary and capricious" standard of the Administrative Procedure Act.[14] However, because the Washington County case was at preliminary injunction stage, the court used a less stringent level of review. The second prong of the court's test was to determine "the likelihood of plaintiffs' success on the merits"[15] at trial. The court found that "Plaintiffs have raised serious, substantial, and difficult questions as to whether the Navy acted arbitrarily and capriciously in deciding to construct the OLF …, such that the Navy failed to provide the environment with the kind and quality of consideration it is due under the law."[16] Citing a number of examples, the court concluded that "Plaintiffs have provided significant evidence that the Navy may have failed to take a hard look at the environmental effect of its decision" and that "the Navy may have failed to meet its burden under NEPA to sufficiently analyze the cumulative impacts of the OLF."[17]

The twin goals of effective environmental stewardship and maritime homeland security are not mutually exclusive but, rather, must be considered compatible aspects of seamless Coast Guard operations.

The third prong of the court's analysis examined the public interest involved. The court explicitly recognized "the duty of the Navy to protect the public, to train its pilots, and to maintain national security."[18] However, the court also noted that "these considerations do not automatically prevail over NEPA's environmental impact statement provisions, even where, as here, the project at issue is military in nature."[19] Concluding that the Navy had presented no tangible harm that would be caused by delay, the Court ruled that "[t]he public will suffer greater harm from the construction of the OLF...without a full con-

sideration of the potential environmental impact and consequences by the Navy, than by any delay that would be caused by preliminary injunction."[20] The Court issued the preliminary injunction, effectively halting further Navy activity to construct the OLF, pending resolution of the lawsuit or until further order of the Court.

Washington County provides a cautionary example of what can happen when environmental compliance takes a back seat to operational necessity. NEPA requires federal agencies to take a hard look at their activities and involve the public in the decision-making process. Given the large amount of land the military controls and the high visibility of military operations, many environmental watchdog groups maintain close scrutiny over proposed military activities. The greatest insurance available to the Coast Guard to avoid successful lawsuits is to aggressively comply with NEPA by: (1) promoting environmental compliance early in the program development process; (2) budgeting adequate funds for such compliance; (3) fully analyzing alternatives to activities that may have a significant impact on the environment; and (4) engaging other expert federal agencies, interested stakeholders, and the general public prior to deciding on a particular course of action.

As the Court noted in the *Washington County v. Navy* case, "Nature lacks a voice with which to speak for itself. Recognizing this, Congress has charged under federal law that agencies listen to the interests of the environment. This process invites the agency to act as a steward and trustee for not only the best interests of the government and its considered action, but for the effects of this action on the environment. This role is complimented by the opportunity for individuals and organizations to participate in the environmental deliberations affecting government action, as is well illustrated by this case."[21]

The Coast Guard has realigned its mission priorities to reflect the new normalcy of the world it operates in. However, it is vital that the Coast Guard recognize that environmental compliance is not discretionary; it is a mandatory duty, where failure to adhere may have dire consequences on training and mission readiness. The Coast Guard has a proud tradition of being an effective and fair environmental regulator. It is incumbent upon all members of Team Coast Guard to be conscientious environmental planners and stewards—doing so is in the best tradition of our Service and will serve to enhance our operational capability.

Endnotes

[1] COMDT COGARD 041339Z OCT 01.
[2] 42 U.S.C. § 4332(2)(C)(i)-(v).
[3] Categorical Exclusion means "a category of actions which do not individually or cumulatively have a significant effect on the human environment and … for which, therefore, neither an environmental assessment or an environmental impact statement is required." 40 C.F.R. § 1508.4.
[4] Environmental Assessment means "(a) [A] concise public document for which a Federal agency is responsible that serves to: (1) Briefly provide sufficient evidence and analysis for determining whether to prepare an environmental impact statement of a finding of no significant impact. (2) Aid an agency's compliance with [NEPA] when no environmental impact statement is necessary. (3) Facilitate preparation of a statement when one is necessary. (b) Shall include brief discussions of the need for the proposal, of alternatives …, of the environmental impacts of the proposed action and alternatives, and a listing of agencies and persons consulted." 40 C.F.R. § 1508.9
[5] Finding of no significant impact means "a document by a Federal agency briefly presenting the reasons why an action, not otherwise excluded (see supra "Categorical Exclusion") will not have a significant effect on the human environment and for which an environmental impact statement therefore will not be prepared. It shall include the environmental assessment or a summary of it and shall note any other environmental documents related to it …. If the assessment is included, the finding need not repeat any of the discussion in the assessment but may incorporate it by reference." 40 C.F.R. § 1508.13.
[6] Environmental Impact Statement means "a detailed written statement as required by section 102(2)(C) of [NEPA].
[7] *Washington County, North Carolina et al. v. United States Department of the Navy*, 317 F.Supp.2d 626, 630 (E.D. North Carolina) (2004).
[8] Id. at 630 – 631.
[9] See e.g., The Endangered Species Act, 16 U.S.C. § 1536(7)(j) (Exemption for national security reasons); The Clean Water Act, 33 U.S.C. § 1323(a) (Presidential exemption); Resource Conservation and Recovery Act 42 U.S.C. § 6961(a) (Presidential exemption).
[10] 317 F.Supp.2d 626 (E.D. North Carolina) (2004).
[11] The OLF was being constructed to support training operations associated with the homebasing of 12 F/A-18 E/F Super Hornet squadrons at Naval Air Station Oceana, Virginia, and two similar squadrons at Marine Corps Air Station Cherry Point, North Carolina.
[12] Id. at 632.
[13] Id. at 635.
[14] See 5 U.S.C. § 706.
[15] Id. at 632.
[16] Id. at 636.
[17] Id.
[18] Id. at 637.
[19] Id.
[20] Id.
[21] Id. at 631.

Slime and Punishment

"Honesty pays, but it don't seem to pay enough to suit some people."

Frank McKinney Hubbard, cartoonist, 1868-1930

by Bill Abernathy
PTP Coordinator, U.S. Coast Guard Human Element and Ship Design Division

by Diana McLaughlin[1]
Human Element and Ship Design Division

Have you ever seen one of those cartoons in which the main character, in the throes of an ethical dilemma, is greeted by a devil and an angel on his shoulders? The "devil" always pops up first, egging the person on: "C'mon, everybody else does it once in awhile. Nobody's going to find out, so who cares?"

It is then the angel's turn to explain the right thing to do, appealing to that person's conscience. The premise usually manages to get an appreciative laugh—who hasn't been tempted at some point in their lives? After all, most people are neither wholly evil nor angelic, just human beings somewhere in between, trying to get through life's challenges.

Dilemmas faced by the maritime industry lead crewmembers, their managers, and their company's owners to make tough choices every day. As in any business, there is temptation to walk a very fine line to boost profit margins. To keep companies from crossing these lines, regulations serve as guardian angels, clearly delineating what must be done to keep a ship's crew, technology, organizational management, and external environment in good operating condition. However, these regulations are only as effective as the people who not only comply with them, but respect the need for them, as well. That's where Prevention Through People (PTP) comes in.

PTP: A Mariner's Informed Conscience

Since its inception in 1994, Prevention Through People has worked to encourage the achievement of the world's safest, most environmentally sound, and cost-effective marine operations by emphasizing the role of people in preventing casualties and pollution. Neither a devil with dollar signs for eyes, nor a holier-than-thou angel, PTP might best be described as a mariner's conscience when choosing between the two. By providing information, creating partnerships, and sharing solutions, PTP aims to embed a proactive approach throughout the maritime industry by demonstrating the advantages of doing the right thing.

Recent Environmental Crimes

In the past year, several different shipping corporations and ship engineers have been accused of falsifying records to conceal the intentional dumping of waste oil into the ocean. For example, Höegh Fleet Services A/S, a Norwegian operator of a fleet of oceangoing cargo ships, was sentenced to pay a fine of $3.5 million for seven felony charges. The engineering officer on the *M/V Höegh Minerva* was found guilty of falsifying documents and covering up evidence to obstruct or influence a United States Coast Guard investigation.[2] In another case, the chief engineer on the tanker ship *M/T Aral Sea*, owned by Harike Shipping, Inc., pled guilty to concealing overboard discharges of oil-contaminated bilge waste through false log books and statements.[3] Such practices are cheaper, quicker, and easier than treating the oily water or transferring oil waste to shoreside facilities.

Who Can Stop Illegal Activity?

In cases such as the ones mentioned above, it was the intelligence, alertness, and honesty of people that brought criminal practices into the light. In the case of the *M/V Höegh Minerva*, a "magic pipe" allowing crewmembers to bypass the ship's pollution prevention equipment would have gone undetected if not for the courageous efforts of

a crewmember on board the ship who secretly passed a note describing the illegal activity to Coast Guard inspectors.

On the *M/T Aral Sea*, members of the U.S. Coast Guard Marine Safety Office discovered waste oil in the overboard piping of the tanker during a routine inspection. Realizing that the waste oil had no technical explanation, the inspectors determined they must look to human factors as the cause. This illustrates another area of focus for PTP: To incorporate more training of Coast Guard personnel in the areas of human error detection, assessment, and prevention techniques.

We will continue to rely on the honesty and intelligence of people to detect and cut short further criminal activity. However, PTP's greater focus is to encourage a maritime culture of safety in which the unsafe or deliberate practices leading to environmental damage never occur in the first place.

Maritime Fines on the Rise

Besides clearing his conscience, the whistleblower on the *M/V Höegh Minerva* received a $300,000 reward for his honesty. In contrast, Höegh Fleet Services A/S was sentenced to pay a fine of $3.5 million, develop and implement a comprehensive environmental compliance plan for its fleet of 38 vessels that call on U. S. ports, and serve four years on probation. A significant part of the criminal fine, $1.6 million, will be used to fund environmental projects that benefit, preserve and restore ecosystems adjoining the coastlines of Washington and California.

The *M/V Höegh Minerva's* fine is one of the larger ones thus far in a continuing stream of heavier penalties handed down to corporations and their employees as punishment for such behavior.[4] For his false statements and presentation of false records to the Coast Guard during the inspection of the *M/T Aral Sea*, the defendant faces a maximum penalty of up to five years of imprisonment, a fine up to $250,000, and probation for up to three years. The former vice president of Holland America Line, an operating line of Carnival Corporation, recently pled guilty to delivering reports reporting the existence of a required environmental audit program, when, in fact, he knew that no such program existed. He was sentenced to three years' probation, ordered to pay a $10,000 fine, and ordered to perform 450 hours of community service.[5]

By promoting a stronger culture of safety, security, and pollution prevention, PTP affects the bottom line in a positive financial way. Money spent recovering from an accident and cleaning up a spill greatly exceeds money spent on preventive measures.

A Balanced Approach to Managing Safety

Whether environmental damage is accidental or deliberate, Prevention Through People offers strategies to incorporate a comprehensive and balanced safety system approach to human error prevention. It proposes looking at the human element in managing safety performance as a system consisting of four core components that affect people's performance. These components may be viewed as pillars built on the solid foundation of rules, regulations, and standards that regulators and industry leaders establish for safe operations:

- Management: Organizational management sets the stage for safe operations. A commitment to safety plays a vital role in people's performance. Management's corporate culture, goals, commitment to safety, directions, procedures, processes, communications, feedback, quality assurance, incentives, accountability, and ethics all affect performance and influence safety. If management demonstrates safe, secure, and ethical practices, commitment to the same values will be demonstrated throughout the entire operation.

- Work Environment: This pillar refers to those external physical factors that affect people's judgment, efficiency, and effectiveness. Physical layout of the workspace, distractions, man/machine interfaces, waterway conditions, congestion, weather, time of day, and personnel interaction are examples. To prevent environmental accidents such as oil spills, vessels need to strive for continuous improvement. By evaluating which aspects of the work environment put different vessels at the greatest risk, companies can then decide how to best allocate time, effort, and funding needed to improve each aspect. Failure to do so may result in greater penalties if charged criminally.

- Behavior: This pillar refers to those behavioral influencing factors that affect people's performance. Examples include personal leadership, aptitude, health, values, workload, stress, training, attitude, physical capability, experience, and prejudices. In this area, one can easily reason that a crew that has been well-trained will perform better and have fewer accidents. However, all the training in the world will not prevent dishonest practices if they are modeled by a senior crewmember. Likewise, a mate joining a crew known to "cut corners" will most likely follow suit, putting the vessel as a whole at greater risk for environmental accidents or dishonest practices.

- New Technology: The last pillar is the introduction of new technology in the work environment. Technology must be designed to be compatible with human abilities and limitations. When technology design is not "human-centered," it can have a negative impact on people's performance and safety. Advanced operational methods, advanced engineering methods, systems integration, automation, computerization, and simulation are a few examples.

Safety performance is a fluid and dynamic outcome of a system that must be kept in balance to perform properly. The key to safe, secure, and environmentally safe operations is a balanced approach to these four pillars. The maritime industry, mariners, government, classification societies, and insurers are all responsible for maintaining balance in the safety system.

We must keep in mind that each action is just a piece of a larger picture. Therefore, to be effective, companies must commit themselves, their staff, and their operations to promoting safer, more productive environments. For each model company taking the step up, others will essentially be forced to a higher level. Peer pressure is to everyone's advantage.

Culture of Safety

Prevention Through People promotes a cultural change within a company to improve its safety posture. The International Maritime Organization (IMO) defines organizations with such a safety culture as those that "give appropriate priority to safety and realize that safety has to be managed like other areas of the business. For the shipping industry, it is in the professionalism of seafarers that the safety culture must take root."[6] Furthermore, the IMO explains:

- "The challenge for trainers and training, and managers ashore and afloat, is how to minimize these unsafe acts, how to instill not only the skills but also the attitudes necessary to ensure safety objectives are met. The aim should be to inspire seafarers towards firm and effective self-regulation and to encourage personal ownership of established best practice.
- Internationally recognized safety principles and the safeguards of best industry practice have to become an integral part of an individual's own standards."[7]

To make real, lasting change, the key is to address problems holistically and, in effect, change the culture aboard a vessel to one of safety, accuracy, and honesty. An organization with a solid safety culture can identify and manage current risks, greatly reducing the risk of incidents that may lead to severe losses, costly, or arduous reforms, and the diminishment of its public image.

Upon this foundation, PTP will continue to promote support systems that foster improved safety culture. Much of this work continues to take place through industry-government partnerships at all levels, from the Commandant to field units, from regional Harbor Safety Committees to national-level working groups.

Finally, a safety program is only as effective as the culture that supports it. While laws and regulations can create strong incentives and disincentives that encourage an organization to operate safely, only a strong safety culture can proactively ensure long-term reduction in the risk of incidents. Accordingly, the focus for PTP will be to continue to serve as "the mariner's informed conscience," to promote the best practices available, and to make it progressively easier for the maritime industry to choose to do the right thing.

---

[1] Contractor with Sage Systems Technologies.

[2] United States Department of Justice, "Norwegian Shipping Company Pays $3.5 Million for Criminal Charges Relating to Dumping of Waste Oil Into Ocean: Whistleblower given $300,000 Award," June 29, 2004, <http://www.justice.gov/usao/waw/press_room/2004/jun/hoegh.htm>.

[3] United States Department of Justice, "Chief Engineer of Oil Tanker Pleads Guilty to Making False Statements to Conceal Improper Discharges," June 16, 2004, <http://www.justice.gov/opa/pr/2004/June/04_enrd_413.htm>.

[4] Seattle Post-Intelligencer Editorial Board, "'Magic Pipes' Not for This Sound," July 1, 2004, <http://seattlepi.nwsource.com/opinion/180203_dumped.html>.

[5] United States Department of Justice, "Former Holland America Line Executive Pleads Guilty and is Sentenced for Delivering False Reports," July 1, 2004, <http://www.justice.gov/usao/fls/HollandAmerica.html>.

[6] International Maritime Organization, "Safety Culture," <http://www.imo.org/home.asp>.

[7] Ibid.

U.S. Navy's Military Sealift Command

Worldwide military transportation focused on safety and security.

by Lt. Cmdr. Joe Paitl
U.S. Coast Guard Liaison Officer

"As we move forward to the challenges of the future, the command [Military Sealift Command] is not resting on the laurels of a highly successful history. We're working hard to increase our efficiency and effectiveness and to improve our service to customers. Let there be no doubt, Military Sealift Command will deliver!"

—David L. Brewer III
Vice Adm., U.S. Navy
Commander, Military Sealift Command

Military Sealift Commander Vice Adm. David Brewer, left, stands with his Safety Manager, Paul Comolli, outside the admiral's office at MSC Headquarters. Coast Guard Liaison Officer Lt. Cmdr. Joe Paitl, USCG.

Established in 1949, and renamed Military Sealift Command (MSC) in 1970, the Military Sea Transportation Service was the product of an effort to combine military maritime transportation services of four separate World War II era agencies into one. Today's MSC is a complex organization consisting of 123 ships and about 9,300 employees. Commanded by Vice Adm. David L. Brewer III, MSC is headquartered at the Washington Navy Yard in the District of Columbia. MSC has five area commands located in Norfolk, Va.; San Diego, Calif.; Naples, Italy; Yokohama, Japan; and Manama, Bahrain.

Mission

Military Sealift Command is the principal provider of maritime transportation for the Department of Defense (DOD), whether the United States is at war or enjoying peace. During times of war, MSC transports military equipment and supplies needed to sustain U.S. war-fighting efforts. About 95 percent of all equipment and supplies required to sustain the U.S. military during war is transported by sea[1]. During peacetime, MSC supports and replenishes the U.S. Navy's combatant fleet, conducts a variety of special missions, and steadily plans and prepares for future contingencies. The Military Sealift Command has separate and distinct chains of command; MSC supports the U.S. Transportation Command (USTRANSCOM) on national defense transportation-related issues, and it supports the Chief, Naval Operations (CNO) on Navy-specific issues.

MSC operates U.S. Army, U.S. Air Force, and Defense Logistics Agency Prepositioning ships, as well as Strategic Sealift ships, for the USTRANSCOM. Commanded by Air Force Gen. John W. Handy and headquartered at Scott Air Force Base in St. Louis, Ill., the USTRANSCOM is a joint-service organization responsible for providing air, land, and sea transportation for DOD. MSC operates Naval Fleet Auxiliary Force ships, Special Mission ships, and Navy and Marine Corps Prepositioning ships for the CNO, Adm. Vern Clark.

Organizational Structure

Approximately 80 percent of Military Sealift Command's 9,300 employees—"our most valuable resource," according to Vice Adm. Brewer—serve aboard ships. More than 50 percent of MSC employees are federal civil service personnel. MSC also employs active duty military members, military reservists, and private contractors. MSC vessels, with few exceptions, are crewed by civilians—either federal civilian mariners (CIVMARs) or contract mariners.

The MSC Fleet is divided operationally into four distinct programs: Naval Fleet Auxiliary Force, Special Mission, Prepositioning, and Strategic Sealift. Although the Naval Fleet Auxiliary Force program operates only government-owned vessels, the other three programs operate both government-owned vessels and privately-owned vessels that are chartered by MSC.

The Naval Fleet Auxiliary Force (NFAF) is comprised of ammunition ships, combat stores ships, ocean tugs, oilers, and hospital ships. These ships directly support the Navy's combatant fleet. For the most part, the NFAF ships provide U.S. warships with food, fuel, spare parts, and ammunition, enabling the warships to remain at sea and combat ready for extended time periods. The NFAF's two hospital ships, *USNS Comfort* and *USNS Mercy*, are typically kept in a reduced operating status, but either ship can be readied to deploy within five days. Each hospital ship contains 12 operating rooms and 1,000 beds.

The Special Mission fleet is comprised of various highly specialized seagoing platforms for missions that include oceanographic and hydrographic surveying, underwater surveillance, acoustic surveying and submarine support, missile tracking, cable laying and repair, deep submergence recovery, and counter-drug operations.

The Military Prepositioning Ship (MPS) program was established in the early 1980s in response to a need for the rapid deployment of U.S. combat forces to global areas of concern. These ships loaded with military equipment and ammunition are pre-staged at strategic locations around the world. Initially intended to support only the U.S. Marine Corps, these ships now carry supplies for the Army, Air Force, Navy, and Defense Logistics Agency, as well as for the Marines. The MPS program provides the United States with the ability to quickly deploy military forces anywhere in the world in response to emerging contingencies.

***USNS Leroy Grumman* operating between *USS Normandy* (left) and *USS George Washington* (right), as *Leroy Grumman* provides fuel to *George Washington*. Military Sealift Command fast combat support ship, *USNS Supply*, is shown in the background along with MSC combat stores ship, *USNS Saturn*. Courtesy MSC Public Affairs Office.**

The Strategic Sealift fleet is comprised of tankers and dry cargo ships that transport fuel, heavy equipment, and other DOD supplies both during

peacetime and war. In addition, the Strategic Sealift program has the ability to increase its sealift capabilities by roughly 70 ships through the use of the Maritime Administration's (MARAD's) Ready Reserve Force (RRF). The Strategic Sealift program maintains operational control of RRF ships, once those vessels are activated by MSC. Through the Strategic Sealift program and MARAD, the Military Sealift Command has the ability to surge its sealift capacity to sustain DOD operations well above and beyond the capabilities of its 123-ship core fleet.

Coast Guard's Role

The U.S. Coast Guard and Military Sealift Command have enjoyed a successful association,

Text continues on page 62

Top: *USNS Observation Island* underway. This vessel is the larger of Military Sealift Command's two missile range instrumentation vessels. Center: The smaller missile range instrumentation vessel, *USNS Invincible*. operating next to *Observation Island*. Bottom: *USNS Impeccable* is one of five MSC ocean surveillance ships. Courtesy MSC Public Affairs Office.

Above: *USNS Sisler* is a large medium speed roll-on/roll-off (LMSR) prepositioning ship. LMSRs such as *Sisler*, acquired as a result of lessons learned during Operation Desert Storm in the early 1990s, served as Military Sealift Command workhorses during Operation Iraqi Freedom. MSC operates 19 LMSRs with a carrying capacity of about 300,000 square feet per ship. Below: Stryker vehicles being driven off an MSC LMSR. Courtesy MSC Public Affairs Office.

SHIPS OF THE MILITA

NAVAL FLEET AUX FORCE COMMAND

OILERS

T-AO-187	KAISER	USNS
T-AO-189	JOHN LENTHALL	USNS
T-AO-193	WALTER S. DIEHL	USNS
T-AO-194	JOHN ERICSSON	USNS
T-AO-195	LEROY GRUMMAN	USNS
T-AO-196	KANAWHA	USNS
T-AO-197	PECOS	USNS

FLEET OCEAN TUGS

T-ATF-168	CATAWBA	USNS
T-ATF-169	NAVAJO	USNS
T-ATF-170	MOHAWK	USNS
T-ATF-171	SIOUX	USNS
T-ATF-172	APACHE	USNS

FAST COMBAT SUPPORT

T-AOE-6	SUPPLY	USNS
T-AOE-7	RANIER	USNS
T-AOE-8	ARCTIC	USNS
T-AOE-9	BRIDGE	USNS

HOSPITAL

T-AOE-6	MERCY	USNS
T-AOE-7	COMFORT	USNS

AMMUNITION

T-AO-198	BIG HORN	USNS
T-AO-199	TIPPECANOE	USNS
T-AO-200	GUADALUPE	USNS
T-AO-201	PATUXENT	USNS
T-AO-202	YUKON	USNS
T-AO-203	LARAMIE	USNS
T-AO-204	RAPPAHANNOCK	USNS

T-AE-26	CATAWBA	USNS
T-AE-28	NAVAJO	USNS
T-AE-32	MOHAWK	USNS
T-AE-33	SIOUX	USNS
T-AE-34	APACHE	USNS
T-AE-35	APACHE	USNS

COMBAT STORES

T-AFS-3	NIAGARA FALLS	USNS
T-AFS-5	CONCORD	USNS
T-AFS-7	SAN JOSE	USNS
T-AFS-8	SIRIUS	USNS
T-AFS-9	SPICA	USNS
T-AFS-10	SATURN	USNS

PREPOSITIONING PROGRAM

CONTAINER RO/RO

T-AK-3000	CPL LOUIS J. HAUGE JR	MV
T-AK-3001	PFC WILLIAM B. BAUGH	MV
T-AK-3002	PFC JAMES ANDERSON JR	MV
T-AK-3003	1ST LT ALEX BONNYMAN	MV
T-AK-3004	PVT FRANKLIN J. PHILLIPS	MV
T-AK-3005	SGT MATEJ KOCAK	SS
T-AK-3006	PFC EUGENE A. OBREGON	SS
T-AK-3007	MAJ STEPHEN W. PLESS	SS
T-AK-3008	2ND LT JOHN P. BOBO	MV
T-AK-3009	PFC DEWAYNE T. WILLIAMS	MV
T-AK-3010	1ST LT BALDOMERO LOPEZ	MV
T-AK-3011	1ST LT JACK LUMMUS	MV
T-AK-3012	SGT WILLIAM R. BUTTON	MV
T-AK-3015	1ST LT HARRY L. MARTIN	USNS
T-AK-3016	LCPL ROY M. WHEAT	USNS
T-AK-3017	GYSGT FRED W. STOCKHAM	USNS

MODULAR CARGO DELIVERY SYSTEM

T-AK-5029	CAPE JACOBS	SS

HIGH SPEED

HSV-4676	WESTPAC EXPRESS	HSV

LARGE MEDIUM SPEED RO/RO

T-AKR-310	WATSON	USNS
T-AKR-311	SISLER	USNS
T-AKR-312	DAHL	USNS
T-AKR313	RED CLOUD	USNS
T-AKR-314	CHARLTON	USNS
T-AKR-315	WATKINS	USNS
T-AKR-316	POMEROY	USNS
T-AKR-317	SODERMAN	USNS

TANKERS

T-AOT-5084	CHESAPEAKE	SS
T-AOT-9101	PETERSBURG	SS

FREIGHTERS

T-AK-4496	CAPT STEVEN L. BENNETT	MV
T-AK-4544	MAJ BERNARD F. FISHER	MV
T-AK-323	MERLIN	MV

CONTAINERS

T-AK-4496	CAPT STEVEN L. BENNETT	MV
T-AK-4544	MAJ BERNARD F. FISHER	MV
T-AK-4638	AIC WILLIAM H. PITSENBARGER	MV

RY SEALIFT COMMAND

SPECIAL MISSION PROGRAM

OCEAN SURVEILLANCE

T-AGOS-19	VICTORIUS	USNS
T-AGOS-21	EFFECTIVE	USNS
T-AGOS-22	LOYAL	USNS
T-AGOS-23	IMPECCABLE	USNS
RV	CORY CHOUEST	MV

SUBMARINE SUPPORT (Long Term)

DSESS	KELLIE CHOUEST	MV
DSESS	DOLORES CHOUEST	MV
SSV	CAROLYN CHOUEST	MV
SSV	C-COMMAND	MV

NAV TEST SUPPORT

T-AGS-45	WATERS	USNS

CABLE REPAIR

T-ARC-7	ZEUS	USNS

SURVEYING

T-AGS-51	JOHN MCDONNELL	USNS
T-AGS-60	PATHFINDER	USNS
T-AGS-61	SUMNER	USNS
T-AGS-62	BOWDITCH	USNS
T-AGS-63	HENSON	USNS
T-AGS-64	BRUCE HEEZEN	USNS
T-AGS-65	MARY SEARS	USNS

ACOUSTIC RESEARCH

T-AG-195	HAYES	USNS

COMMAND

AGF-11	CORONADO	USS
LCC-20	MOUNT WHITNEY	USS

MINE WARFARE COMMAND

HSV-2	SWIFT	HSV

MISSILE RANGE INSTRUMENTATION

T-AGM-23	OBSERVATION ISLAND	USNS
T-AGM-24	INVINCIBLE	USNS

STRATEGIC SEALIFT PROGRAM

LARGE MEDIUM SPEED RO/RO

T-AKR-295	SHUGHART	USNS
T-AKR-295	GORDON	USNS
T-AKR-295	YANO	USNS
T-AKR-295	GILLILAND	USNS
T-AKR-295	BOB HOPE	USNS
T-AKR-295	FISHER	USNS
T-AKR-295	SEAY	USNS
T-AKR-295	MEDONCA	USNS
T-AKR-295	PILILAAU	USNS
T-AKR-295	BRITTAN	USNS
T-AKR-295	BENAVIDEZ	USNS

FREIGHTERS

T-AK	AMERICAN TERN	MV
T-AK	SAGAMORE	MV
T-AK	SEAMARK III	MV

TANKERS

T-AOT-1121	GUS W. DARNELL	MV
T-AOT-1121	PAUL BUCK	USNS
T-AOT-1121	SAMUEL L. COBB	USNS
T-AOT-1121	RICHARD G. MATTHIESEN	USNS
T-AOT-1121	LAWRENCE H. GIANELLA	USNS
T-AOT-1121	MONTAUK	MV

FAST SEALIFT

T-AKR-287	ALGOL	USNS
T-AKR-288	BELLATRIX	USNS
T-AKR-289	DENEBOLA	USNS
T-AKR-290	POLLUX	USNS
T-AKR-291	ALTAIR	USNS
T-AKR-292	REGULUS	USNS
T-AKR-293	CAPELLA	USNS
T-AKR-294	ANTARES	USNS

Chart courtesy Paul Comolli, MSC Safety Manager, and Ron Marcolini, MSC Safety Engineer.

Clockwise from above left: The MSC LMSR, *USNS Charlton*, sails under a rainbow after cargo was loaded in Beaumont, Texas. Courtesy *Charlton* Third Mate Shannon Bluestein; A tank truck being driven from a Military Sealift Command LMSR onto landing craft. Courtesy MSC Public Affairs Office; Coast Guard inspectors walk down the loading ramp of the *USNS Bob Hope* after inspecting military cargo stowage plans and procedures. Courtesy Public Affairs Officer Dana Warr, USCG; The Coast Guard Cutter *Brant* (left), escorts the military cargo ship *Cape Rise* (right) into Corpus Christi, Texas. Courtesy Chief Warrant Officer Robert D. Wyman, USCG.

Above: Coast Guard Seventh District Commander, Rear Adm. Jay Carmichael (left), and U.S. Army Col. Pete Lennon (right), Commanding Officer of the 1189th Transportation Terminal Brigade, look out over the thousands of Army vehicles and aircraft being loaded aboard the *USNS Mendonca*. Rear Adm. Carmichael was in Savannah to meet with Vice Adm. David Brewer, Commander of Military Sealift Command, and talk with Coast Guard members involved in the loading operations. Public Affairs Officer Danielle DeMarino, USCG.

forged from a mutual commitment to improve safety and security aboard MSC ships. The inspection and certification of MSC vessels has been a longstanding, major national defense support function of the Coast Guard. Since the Military Sealift Command's inception, the Coast Guard and MSC have maintained an agreement outlining the Coast Guard's involvement in the safety of MSC ships. With 123 ships in its core fleet and a surge capability to increase its fleet of ships to more than 200, MSC is

our nation's largest shipping organization. As such, MSC is the Coast Guard's leading transportation-related customer, both in terms of fleet size and volume of operations.

To help manage and implement the safety and security agreement between MSC and the Coast Guard, a military liaison officer is assigned to MSC Headquarters and a civilian program manager is assigned to Coast Guard Headquarters. Also, eight marine inspectors are assigned to various Coast Guard field units and are designated to help support activities aboard MSC ships. As testimony to its commitment to ship safety and security, MSC annually reimburses the Coast Guard for personnel and service costs.

Vice Adm. David L. Brewer III, U.S. Navy, Commander of Military Sealift Command (right), and Rear Adm. T.H. Gilmour (left), U.S. Coast Guard, Assistant Commandant for Marine Safety, Security and Environmental Protection, sign a memorandum of agreement that establishes procedures for inspection and certification of MSC's Naval ship fleet. Courtesy Barry Lake, MSC Public Affairs Office.

Memorandum of Agreement

The safety and security agreement between Military Sealift Command and the Coast Guard has been recorded in a written memorandum of agreement (MOA). This MOA sets forth provisions under which MSC government-owned vessels shall be inspected and certificated by the Coast Guard. Although U.S. vessel inspection laws and regulations do not apply to government-owned ships, MSC has recognized the value of Coast Guard oversight. Accordingly, through the MOA, inspection and safety standards have been made applicable to all MSC government-owned ships that are built to U.S. commercial standards. This covers about 90 percent of MSC's core fleet. The other 10 percent that are not built to commercial standards are inspected through a Navy-MSC ship inspection program.

In addition to vessel inspection procedures, the MOA outlines authorities, applicable regulations, waivers, manning, marine casualty reporting and investigations, vessel repairs, alterations, and plan approval, as well as concerns unique to government-owned vessels. The MOA also describes special programs in which MSC ships may participate, which provide alternative methods to demonstrate compliance with applicable regulations.

Vice Adm. Brewer and the Coast Guard's Assistant Commandant for Marine Safety, Security and Environmental Protection, Rear Adm. T.H. Gilmour, signed the current MOA on July 29, 2004, replacing a seven-year-old agreement. In addition to fine-tuning existing provisions, the new MOA addresses changes to federal laws and regulations and new international requirements, such as those contained in the Maritime Transportation Security Act (MTSA), International Ship and Port Facility Security (ISPS) Code, International Convention for the Safety of Life at Sea (SOLAS), and International Convention for the Prevention of Pollution from Ships (MARPOL).

Common Bond

Military Sealift Command and the Coast Guard share the common bond of safety and security. Just as MSC has recognized the value of having Coast Guard safety and security oversight of its ships, the Coast Guard has recognized the importance of MSC's strategic objectives in support of the United States' defense and war fighting efforts.

The Coast Guard's contribution to MSC's success has been widely shared by Coast Guard Headquarters (CGHQ), the Marine Safety Center, the National Maritime Center (NMC), the Intelligence Coordination Center, Area and District Commands, Marine Inspection Offices (MIOs), Marine Safety Offices (MSOs), activities, sectors, port security, and law enforcement units, as well as cutters, boats, and stations.

Safety Focus

Over the years, Military Sealift Command, through help from the Coast Guard, has been able to maintain a clear focus on maritime safety, despite a steady increase in both customer expectation levels and operational tempo. MSC has met its operational challenges, in part, through organizational improvement, innovation, growth, and the acquisition of more efficient and effective ships.

Following the 1990-91 Gulf War, MARAD RRF ships were upgraded, and MSC acquired large medium-speed roll on/roll off (LMSR) vessels to increase its fleet's carriage capacity and ability to quickly deliver combat equipment and supplies to fighters. In 2003, MSC purchased four T-5 tankers, previously chartered by MSC, to ensure the timely delivery of petroleum products at a reduced cost. Due to MSC's proven ability to operate vessels efficiently and effectively, several fast combat support ships were transferred from the Navy to MSC. In 2005, MSC will receive the first of 11 new Lewis and Clark-class (T-AKE) dry cargo/ammunition ships as part of a five-year plan to upgrade its combat fleet replenishment abilities. Other MSC vessel acquisitions—perhaps Navy salvage ships and submarine tenders—are likely for the future.

MSC Vice Cmdr., Rear Adm. Deborah A. Loewer (center), is flanked by members of her staff as she signs procedures to be included as part of the command's Safety Management System. The MSC's efforts to voluntarily comply with the International Safety Management (ISM) code demonstrate its commitment to safety. Courtesy MSC Public Affairs Office.

Fleet expansion and increased operations by the Military Sealift Command have also increased the Coast Guard's role in working with MSC. When MSC laid plans to build new ships, the Coast Guard was involved in helping MSC maintain safety within its fleet. Likewise, when MSC acquired or upgraded a ship, the Coast Guard was involved through detailed construction plan review and approval by the Coast Guard's Marine Safety Center (CG-MSC), policy design advice from the CGHQ Office of Compliance and the CGHQ Office of Design and Engineering Standards, and countless inspection-related hours invested by personnel at various MSOs and MIOs.

To highlight its leadership role in the maritime community as a safe and environmentally considerate operator, MSC has chosen to voluntarily comply with the International Safety Management (ISM) Code. The ISM Code, adopted by the United Nation's International Maritime Organization (IMO) and included in Chapter IX of SOLAS, provides a sensible international standard for the safe management and operation of ships and for pollution prevention. MSC's fleet of ocean tugs will be the first class of MSC ships to comply with ISM, followed by the new Lewis and Clark-class dry cargo/ammunition ships. MSC also plans to enroll its ships in the Coast Guard's Alternate Compliance Program (ACP) to reduce the number of Coast Guard inspections aboard MSC ships and thereby free up Coast Guard personnel for other duties. Lewis and Clark-class ships are currently being built to ACP standards. MSC sees ISM and ACP as a positive step toward improving safety and productivity through internal ship management, while also reducing the amount of external resources.

Security Focus

Military Sealift Command has elected to voluntarily comply with MTSA and ISPS and has forged a strong union with the Coast Guard to improve security. Moreover, MSC fully supported, in concept, and endorsed the Coast Guard's recent proposal to the IMO to adopt long-range vessel identification and tracking to improve national and international maritime security.

Although MSC agreed to comply with federal and international security regulations, the classified nature of MSC vessel security and force protection plans initially added a relatively large burden to its efforts. To reduce this burden, the Commanding Officer (CO) of the CG-MSC designated Military Sealift Command Headquarters as an alternate site where MSC ships would be permitted to submit their vessel security plans (VSPs). CG-MSC then assigned a team to work with MSC's Force Protection Division in the development and review of their classified VSPs. The CG-MSC team, working with the Force Protection Division, developed customized VSP review procedures, including procedures for local retention and maintenance of VSPs and security assessments. These efforts improved communication security and accelerated compli-

ance. As a result, MSC jumped out to lead the United States in compliance with MTSA and ISPS, while strengthening its vessel security during a time of unparalleled ship operations and troop deployments in the war on terrorism.

The CGHQ Office of Port Security Planning and Readiness and MSC have been working together to develop a process whereby MSC government-owned ships, like their commercial counterparts, will provide the Coast Guard with advance notice prior to arrival in U.S. ports. Once in place, this process is expected to improve Maritime Domain Awareness for Coast Guard operational units and also improve the level of security for MSC ships. Since Coast Guard operational units are privy to a wide assortment of local intelligence within their geographic area of responsibility, they are in an ideal position to help MSC ships identify and respond to security threats. By improving communication and the sharing of information between Coast Guard field units and MSC ships, both agencies stand to improve upon maritime security.

Challenges Ahead: The Future, Transformation

Military Sealift Command, with great success, has participated in a variety of military and humanitarian campaigns, including the Korean and Vietnam Wars, Desert Shield, Desert Storm, Somalia, the Balkans, Haiti, Bosnia-Herzegovina, Kosovo, Operation Enduring Freedom, and Operation Iraqi Freedom. During the course of its existence, MSC has progressively improved its mission performance through logical and effective change. In looking at MSC's contributions in support of two recent and ongoing campaigns, Operation Enduring Freedom and Operation Iraqi Freedom, MSC delivered more than 60 million square feet of combat cargo as of Nov. 18, 2004[1]. Using more understandable metrics, 60 million square feet is about the equivalent of 40 Pentagons, or 660,681 sport utility vehicles (SUVs), each 15.5 feet in length with 95 square feet capacity. If you placed 660,681 SUVs end-to-end, they would extend from Washington, D.C., to El Paso, Texas—a distance of 1,939 miles.

MSC's remarkable performance during Operation Enduring Freedom and Operation Iraqi Freedom did not occur by chance. Rather, MSC's performance was enhanced due to changes made in direct response to lessons learned through participation in previous campaigns. For instance, MSC's decision to expand its fleet's sealift capacity throughout a 10-year period by acquiring LMSRs, in response to lessons learned during Operation Desert Storm, paid large dividends during Operations Enduring Freedom and Iraqi Freedom. Similarly, in response to lessons learned during World War II, post-war change led to the creation of MSC along with large gains in sealift performance.

Just as in the past where MSC learned lessons from experience, effected change in response to these lessons, and improved performance as an outcome, the MSC is looking for new lessons to be learned, new ways to improve, and even greater performance for the future, especially as Operation Iraqi Freedom, Phase III (OIF-III) moves closer toward OIF-IV. Despite past successes, MSC understands the importance of continual change to stay on the cutting edge of performance. MSC Vice Commander, Rear Adm. Deborah Loewer, when touting MSC's new transformation initiative, *Sealift 21*, appropriately described the need for continual change to her staff through the catchphrase: "MSC Transformation is a journey, not a destination." At MSC, change is viewed with optimism—as an essential tool for continued improvement—as a way to keep up with technological advancements in the extremely dynamic world in which we live.

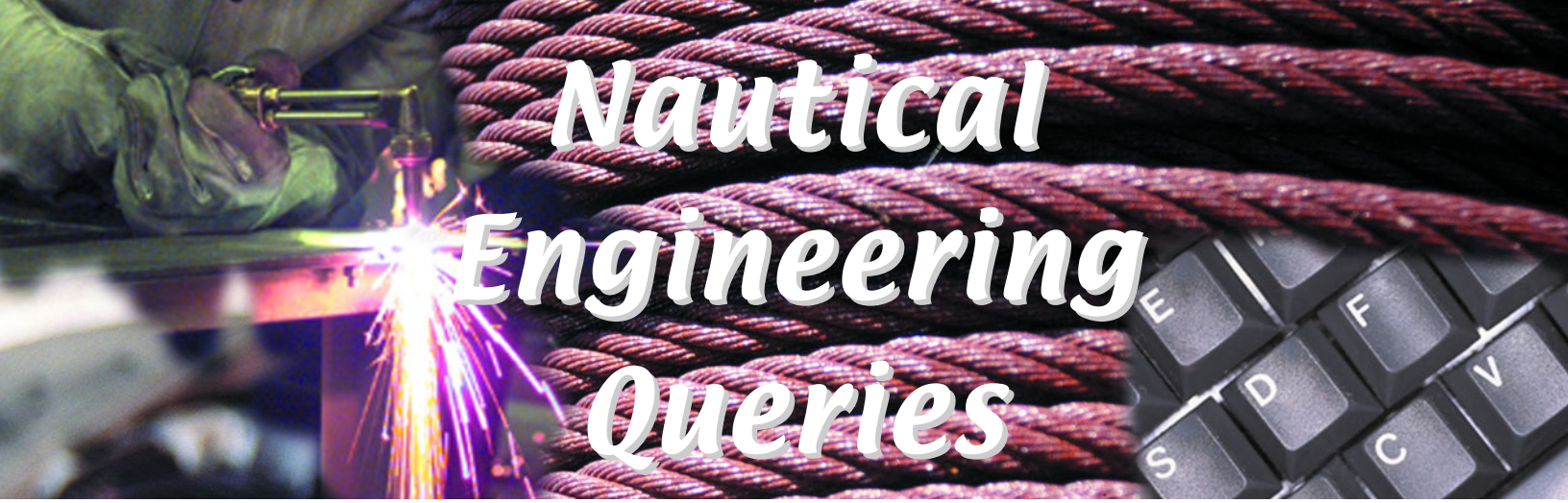
Summary

The Military Sealift Command is more than a premier worldwide military maritime transportation organization; it is an institution with a deliberate and clear business-like culture. Despite that the majority of its vessels are exempt from federal vessel inspection and navigation safety laws, regulations, and international rules, MSC has chosen to comply where at all possible because it is the right thing to do. It is the safety-minded thing to do. It is the security-minded thing to do.

MSC, as a forward-looking organization that embraces change and seeks continued improvement, recognizes the value in maintaining a robust safety and security focus. Accordingly, MSC continues to lead the maritime transportation industry toward safer waters. Along this course, both MSC and the Coast Guard continue to steer. The Military Sealift Command and the Coast Guard, linked together by safety and security, rely on each other—to improve safety at sea, to reduce pollution, to improve national defense, to protect the security of the United States, and to combat and defeat terrorism. With help from agencies like the Coast Guard, "MSC will deliver."

More information about the MSC can be found on its Web site: **www.msc.navy.mil**.

[1] Statistics provided by Military Sealift Command Headquarters Public Affairs Office.



Nautical Engineering Queries

1. To prepare an auxiliary water-tube boiler for a routine hydrostatic test, which of the following procedures should be undertaken before filling the boiler with fresh water?

A. The safety valve escape piping should be disconnected from the valve body and a blank inserted.
Incorrect: A safety valve gag is required to be installed "hand tight" on the safety valve stem to prevent it from opening during the actual test. Escape piping need not be dismantled or modified during a routine hydrostatic test.

B. The boiler vent valves should be opened.
Correct Answer: Opening the drum vent and superheater vent valves (if equipped) will allow any trapped air to be expelled from the boiler as it is filled, thereby preventing the compression/expansion of trapped air during the hydrostatic test, which could result in pressure fluctuations.

C. All handhole/manhole covers should be tightened as much as possible to prevent leaks.
Incorrect: All handhole/manhole covers should only be firmly tightened. As the hydrostatic test is applied, the pressure will tend to firmly seat the covers in place and the nuts holding the dogs should be rechecked for looseness. Only those covers that show signs of leaking during the test should be drawn up with additional force as an initial attempt to stop the leak.

D. All of the above.
Incorrect: As only one of the three answers above is correct, "all of the above" is eliminated as the answer.

---

2. When a megohmmeter is used to test the insulation of a large motor, the initial dip of the pointer toward "zero" is caused by _____.

A. good insulation
Incorrect: If the insulation is clean and not defective or deteriorated, especially with smaller motors, the megohmmeter will register a high value of resistance and will not indicate any appreciable dip toward "zero" ohms.

B. the capacitance of the winding
Correct Answer: Large motors with proper insulation values will show a considerable capacitive effect between the conductors and the frame during the initial operation of the megohmmeter. As the voltage/charge is transferred to the windings, the pointer will dip towards zero due to the flow of charging current.

C. the leakage of the current along the surface of dirty insulation
Incorrect: Dirty or defective insulation will be indicated by slight downscale kicks toward zero.

D. the dielectric-absorption effect of the insulation
Incorrect: This will not cause the meter pointer to dip, but will result in the pointer to slowly increase in value before reaching steady state.

3. During the compression stroke in a four-stroke/cycle, diesel engine, assume that the piston can only travel seven-eighths of the total distance between BDC to the underside of the cylinder head. Which of the following ratios will be the compression ratio for this engine?

A. 6 to 1
Incorrect.

B. 7 to 1
Incorrect.

C. 7.5 to 1
Incorrect.

D. 8 to 1
Correct Answer: The formula to calculate compression ratio is derived as follows. Compression ratio equals the "Total Volume" in the cylinder at start of compression, divided by the "Remaining Volume" in the cylinder at end of compression. It can also be expressed as: Compression ratio equals the cylinder piston displacement volume plus the clearance volume, divided by the clearance volume. The question indicates that the total volume in the cylinder is eight units, the piston displaced volume is seven units, and the remaining volume is one unit, resulting in a compression ratio of 8:1.

---

4. Which of the following operating characteristics of the Bendix drive friction clutch is associated with Bendix drive starter?

A. Helps absorb the shock when the pinion engages the ring gear.
Correct Answer: The clutch helps to cushion the torque force of the pinion as it reaches the end of its axial travel upon engaging with the flywheel.

B. Disengages the pinion from the flywheel ring gear.
Incorrect: After the engine starts, the flywheel rotates the Bendix gear at a higher speed than the rotating shaft of the starter motor. This results in the pinion being rotated in the opposite direction on the starter motor shaft helical spiral, causing the pinion to disengage from the flywheel.

C. Engages the pinion with the flywheel ring gear.
Incorrect: The pinion of the Bendix drive is mounted on the starter motor shaft helical spiral. As the starter motor shaft turns, the pinion gear, which floats on the shaft helical spiral, moves outward, forcing it to mesh with the flywheel ring gear, to rotate the engine. The friction clutch only helps to absorb the shock of initial engagement.

D. Prevents the pinion starter from overrunning on the starter shaft.
Incorrect: The friction clutch is not designed as an overrunning clutch since that would defeat the purpose of the shaft helical spiral in returning the pinion to its initial position after the engine had started.

1. A chart projection depicting the poles and a small area on either side of a connecting meridian, that is sometimes used for star charts, is the _____.

A. azimuthal gnomonic projection
Incorrect: An azimuthal gnomonic projection is produced when a plane is placed tangent to the earth and all other points are projected geometrically from the center of the earth. All bearings from the point of tangency are represented without distortion and the projection indicates true azimuths. This projection is not centered on a connecting meridian.

B. Lambert conformal projection
Incorrect: This projection is formed by using a secant cone to intersect the earth at two standard parallels. The area between the two standard parallels is compressed, and the area beyond is expanded proportionally. When the spacing of the parallels is altered so that the distortion is the same along them as along the meridians, the projection becomes conformal.

C. transverse Mercator projection
Correct Answer: This is a special-case Mercator projection, in which the cylinder is tangent along a meridian. It is used for charts covering a large band of latitude, but extending a relatively short distance on either side of the tangent meridian. This display may be used for star charts to show the sky at various seasons of the year.

D. polyconic projection
Incorrect: This projection eliminates the latitude limitations of a secant conic projection by using a series of cones with each cone tangent to a parallel of latitude. At the edges of the chart, the area between the parallels is expanded to eliminate gaps. The scale is correct along any parallel and along the central meridian. It is not adaptable for star charts.

---

2. A vessel is heading magnetic north and its magnetic compass indicates a heading of 356°. What action should be taken to remove this error during compass adjustment?
Basic compass-adjusting knowledge: (1) Red indicates the north-seeking pole and blue the south-seeking pole of a compass; (2) A magnetic north heading on a magnetic compass is 360°; and (3) To remove the compass error in this question, the compass card must be rotated counterclockwise.

A. If the blue ends of the magnets are to port, and the athwartship tray is at the top, you should remove some of the magnets.
Incorrect: Removing magnets from the tray would decrease their combined magnetic field. The blue ends to port would have less attraction on the red north end of the compass and less repulsion on the blue south end of the compass, allowing the card to rotate clockwise, increasing the error.

B. If the blue ends of the magnets are to starboard, and the athwartship tray is at the bottom, you should remove some magnets.

Question continues next page.

Correct Answer: This would likewise decrease the combined magnetic field of the corrector magnets. However, in this case, the blue ends are to starboard. Lessening the attraction of the blue ends on the north end of the compass and decreasing the repulsion on the south end would permit the compass card to rotate counterclockwise, thereby removing the error.

C. If the red ends of the magnets are to starboard, and the athwartship tray is at the bottom, you should reverse the magnets.
Incorrect: Previously the red ends on the starboard were repelling compass north, and now, with the blue ends to starboard, the corrector magnets are attracting the north end of the compass. Reversing the field of the corrector magnets would cause the compass card to rotate clockwise, thereby increasing the error.

D. If the blue ends of the magnets are to starboard, you should raise the athwartship tray.
Incorrect: Raising the tray would increase the effect of the magnetic field of the corrector magnets on the magnetic compass. This would increase the attraction of the blue ends on the starboard side to the north end of the compass, causing the card to rotate clockwise, thereby increasing the error.

---

3. INTERNATIONAL ONLY: If a towing vessel and her tow are severely restricted in their ability to deviate from their course, the towing vessel shall show lights in addition to her towing identification lights. These additional lights shall be shown if the tow is _____.
Note: There is a difference between the International Rules and the Inland Rules in this respect. The International Rule 27(c) requires the restricted in ability to maneuver lights (RAM) only when towing astern. The Inland Rule 27(c) requires the RAM lights regardless of the position of the tow. Also note that the International Rule refers to vessels towed in Rule 24(a) only, while the Inland Rule refers to all the vessels towed in Rule 24.

A. pushed ahead
Incorrect: These additional lights would be required for a vessel pushing ahead under the Inland Rules.

B. towed alongside
Incorrect: These additional lights would be required for a vessel towing alongside under the Inland Rules.

C. towed astern
Correct Answer: The International Rule 27(c) states that only towing vessels in Rule 24(a) (towing astern) shall show the additional lights for a vessel restricted in her ability to maneuver when the towing vessel and her tow are severely restricted in their ability to deviate from their course.

D. All of the above
Incorrect: Because this question pertains only to the International Rule, choices "A" and "B" are incorrect.

Assistant Commandant's Perspective
Gilmour, Rear Adm. T. H.
Vol. 61, No. 1; Proceedings at 60; Spring 2004; "Assistant Commandant's Perspective," p. 4
Vol. 61, No. 2; The Marine Safety Center; Summer 2004; "Assistant Commandant's Perspective," p. 4
Vol. 61, No. 4; Environmental Crimes; Winter 2004-2005; "Assistant Commandant's Perspective," p. 4

Sirois, Rear Adm. Dennis R.
Vol. 61, No. 3; Search and Rescue; Fall 2004; "Assistant Commandant Perspective," p.4

Barges
Malinoski, Lt. Zach, and Nadeau, Lt. Cmdr. John
Vol. 61, No. 2; The Marine Safety Center; Summer 2004; "Buffalo Marine Barges Continue to Impact the Inland Tank Barge Fleet," p. 26

Champion's Point of View
Fink, Capt. Ernest J.
Vol. 61, No. 1; Proceedings at 60; Spring 2004; "Champion's Point of View," p. 5

Nash, Capt. Roy A.
Vol. 61, No. 2; The Marine Safety Center; Summer 2004; "Champion's Point of View," p. 5

Sawyer, Capt. Steve M.
Vol. 61, No. 3; Search and Rescue; Fall 2004; "Champion's Point of View," p. 5

Karr, Capt. Michael B.
Vol. 61, No. 4; Environmental Crimes; Winter 2004-2005, "Champion's Point of View," p. 5

Coast Guard Auxiliary
Spivak, Wayne
Vol. 61, No. 3; Search and Rescue; Fall 2004; "The Caribbean Volunteer Maritime Search and Rescue Initiative," p.15

Emergency Services
French, Capt. Arthur J. III
Vol. 61, No. 3; Search and Rescue; Fall 2004; "Emergency Medical Services in Coast Guard Search and Rescue," p.19

Gonzalez, Lt. Cmdr. Johnny
Vol. 61, No. 3; Search and Rescue, Fall 2004; "Search and Rescue in the Eastern Caribbean," p. 27

Environmental Protection
Abernathy, Bill and McLaughlin, Diana
Vol. 61, No. 4; Environmental Crimes; Winter 2004-2005; "Slime and Punishment," p. 54

Baumgartner, Capt. William; Lidington, Hanna; Weller, Alex; Krajewski, Lt. Jason; Beistle, Cmdr. Thomas; and Connors, Lt. Cmdr. Timothy
Vol. 61, No. 4; Environmental Crimes; Winter 2004-2005; "Environmental Enforcement Actions," p. 6

Borland, Lt. Curtis
Vol. 61, No. 4; Environmental Crimes; Winter 2004-2005; "Environmental Compliance and Homeland Security" p. 50

Browning, Robert M.
Vol. 61, No. 1; Proceedings at 60; Spring 2004; "Ship Ashore, An Overview of Marine Vessel Casualties," p. 11

Coutu, Lt. Christopher
Vol. 61, No. 4; Environmental Crimes; Winter 2004-2005; "Tackling the Oily Water Separator Issue," p. 11

Craft, Chief Petty Officer Douglas
Vol. 61, No. 1; Proceedings at 60; Spring 2004; "Leveraging IT to Better Serve the Maritime Industry," p. 33

Ellis, Ensign Sara
Vol. 61, No. 1; Proceedings at 60; Spring 2004; "Post OPA-90, The Evolution of Coast Guard Response," p. 59

Emond, Cmdr. Bryan
Vol. 61, No. 1; Proceedings at 60; Spring 2004; "PTP, Important to Maritime Safety, Today & Tomorrow," p. 50

Environmental Crimes Section, U.S. Department of Justice
Vol. 61, No. 4; Environmental Crimes; Winter 2004-2005; "Vessel Pollution and Related Maritime Offenses, 1989-2004," p. 25

Fink, Capt. Ernest J., and Rosen, Ellen
Vol. 61, No. 1; Proceedings at 60; Spring 2004; "A Look Back with Vice Adm. William F. Rea," p. 8

Frisch, Andrew
Vol. 61, No. 4; Environmental Crimes, Winter 2004-2005; "Environmental Crimes Case File: *Alkyon*," p. 22

Gauvin, Robert
Vol. 61, No. 1; Proceedings at 60; Spring 2004; "International Convention for the Safety of Life at Sea, 1974," p. 36

Gronlund, Dr. Wayne
Vol. 61, No. 4; Environmental Crimes; Winter 2004-2005; "Mystery Oil: Who Spilled It?" p. 35

Kallen, Dawn
Vol. 61, No. 4; Environmental Crimes; Winter 2004-2005; "Illegal Sewage Discharges" p. 45

Kirchner, Albert G.
Vol. 61, No. 1; Proceedings at 60; Spring 2004; "Charting the Next Leg… Looking at the Course Ahead for Proceedings," p. 6

Linsin, Gregory
Vol. 61, No. 4; Environmental Crimes; Winter 2004-2005; "Exercise of Prosecutorial Discretion in Vessel Pollution Cases," p. 13

McAvoy, Lt. Cmdr. Kyle, and Hilbert, Lt. Patrick
Vol. 61, No. 2; The Marine Safety Center; Summer 2004; "SERT, A Valuable Resource Tool for Marine Safety Field Units," p. 17

Olsen, Ken
Vol. 61, No. 4; Environmental Crimes; Winter 2004-2005; "Wastes and Machinery Space Maintenance," p. 19
Vol. 61, No. 4; Environmental Crimes, Winter 2004-2005; "Improving Environmental Performance," p. 41
Vol. 61, No. 4; Environmental Crimes, Winter 2004-2005; "Someone Will Report," p. 48

Stern, Ens. Jim
Vol. 61, No. 1; Proceedings at 60; Spring 2004; "History of Port Security Within the Coast Guard," p. 28

Fatigue
Abernathy, Bill, and Chang, Naomi
Vol. 61, No. 1; Proceedings at 60; Spring 2004; " An Advancement in Safety," p. 64

Emond, Cmdr. Bryan
Vol. 61, No. 1; Proceedings at 60; Spring 2004; "PTP, Important to Maritime Safety, Today & Tomorrow," p. 50

Ferries
Emond, Cmdr. Bryan
Vol. 61, No. 1; Proceedings at 60; Spring 2004; "PTP, Important to Maritime Safety, Today & Tomorrow," p. 50

Fire Protection
Caputo, Lt. j.g. Ron, and Kelly, Lt. Scott
Vol. 61, No. 2; The Marine Safety Center; Summer 2004; "Safety of Innovative Vessel Designs, Coast Guard Perspective in Utilizing Performance-Based Fire Protection Analysis to Create Novel Commercial Ship Designs," p. 66

McAvoy, Lt. Cmdr. Kyle; Cushing, Lt. Cmdr. John; and Hecker, Lisa
Vol. 61, No. 2; The Marine Safety Center; Summer 2004; "Regulatory Complexities, The Gulf of Mexico Oil and Gas Industry," p. 57

Najarian, Lt. Holly
Vol. 61, No. 2; The Marine Safety Center; Summer 2004; "Alternative Fire Suppression/ Detection Systems," p. 48

Nash, Capt. Roy A
Vol. 61, No. 2; The Marine Safety Center; Summer 2004; "Champion's Point of View," p. 5

History
Vol. 61, No. 1; Proceedings at 60; Spring 2004; "Marine Safety Council Adds 'Security' to Name," p. 23

Bates, Robert Stanley
Vol. 61, No. 1; Proceedings at 60; Spring 2004; "Three Ships on Maritime Licenses Continue Long Tradition," p. 17

Browning, Robert M.
Vol. 61, No. 1; Proceedings at 60; Spring 2004; "Ship Ashore, An Overview of Marine Vessel Casualties," p. 11

Clark, Cmdr. Brad
Vol. 61, No. 3; Safe and Rescue; Fall 2004; "Command Center Team's New Quarterback," p. 68

Eareckson, Peter
Vol. 61, No. 2; The Marine Safety Center; Summer 2004; "Tonnage Management, Old and New," p. 37

Ferguson, Lt. Jim
Vol. 61, No. 1; Proceedings at 60; Spring 2004; "Mariner's Seabag, Liberty Ships," p. 68

Fink, Capt. Ernest J., and Rosen, Ellen
Vol. 61, No. 1; Proceedings at 60; Spring 2004; "A Look Back with Vice Adm. William F. Rea," p. 8

Frawley, Lt. Mike
Vol. 61, No. 3; Search and Rescue; Fall 2004; "*Bow Mariner*: Coast Guard Air Stations Accepting the Tragic Challenge," p. 10

Furukawa, Jon
Vol. 61, No. 1; Proceedings at 60; Spring 2004; "Merchant Mariner Documentation, An Overview of a Credential's Evolution," p. 55

Gilmour, Rear Adm. T. H.
Vol. 61, No. 2; The Marine Safety Center; Summer 2004; "Assistant Commandant's Perspective," p. 4

Hollis, Lt. Robert Bryan
Vol. 61, No. 3; Search and Rescue; Fall 2004; "So That Others May Live," p. 64

Kime, Adm. J. William
Vol. 61, No. 2; The Marine Safety Center; Summer 2004; "History of the Marine Safety Center," p. 6

Kirchner, Albert G.
Vol. 61, No. 1; Proceedings at 60; Spring 2004; "Charting the Next Leg… Looking at the Course Ahead for Proceedings," p. 6

Leese, Ens. Eric D.
Vol. 61, No. 3; Search and Rescue; Fall 2004; "2003 Association for Search and Rescue at Sea Award Recipient," p. 41

McAvoy, Lt. Cmdr. Kyle, and Hilbert, Lt. Patrick
Vol. 61, No. 2; The Marine Safety Center; Summer 2004; "SERT, A Valuable Resource Tool for Marine Safety Field Units," p. 17

Myers, Joseph
Vol. 61, No. 3; Search and Rescue; Fall 2004; "Search and Rescue: The Last Safeguard," p. 84

Paitl, Lt. Cmdr. Joe
Vol. 61, No. 4; Environmental Crimes; Winter 2004-2005; " U.S. Navy's Military Sealift Command," p. 57

Pickles, Lt. Daniel
Vol. 61, No. 3; Search and Rescue; Fall 2004; "Rescue of *Miss Judith*," p. 46

Rochon, Rear Adm. Stephen W.
Vol. 61, No. 3; Search and Rescue; Fall 2004; "Bravery Against All Odds: The Pea Island Rescue Retold Over a Century Later," p. 87

Sawyer, Capt. Steve M.
Vol. 61, No. 3; Search and Rescue; Fall 2004; "Making Preparations for a Mass Rescue Operation," p. 43

Spivak, Wayne
Vol. 61, No. 3; Search and Rescue; Fall 2004; "The Caribbean Volunteer Maritime Search and Rescue Initiative," p.15

Stilleke, Cmdr. Steve
Vol. 61, No. 3; Search and Rescue; Fall 2004; "Civilian Search and Rescue Controllers: Who Needs Them? We Do!" p. 62

Stuber, Chief Warrant Officer Kenneth D.
Vol. 61, No. 3; Search and Rescue; Fall 2004; "Storm Warriors in the 21st Century," p. 55

IMO
Apps, Lt. Jeff
Vol. 61, No. 1; Proceedings at 60; Spring 2004; "International Port Security Program," p. 48

Cherry, Cmdr. Timothy, and Wolf, Mark
Vol. 61, No. 2; The Marine Safety Center; Summer 2004; "Navigating the Maze of Vessel Standards and Alternate Compliance Options," p. 34

Edwards, Dave
Vol. 61, No. 3; Fall 2004; Search and Rescue; "Search and Rescue Engagement," p. 35

Emond, Cmdr. Bryan
Vol. 61, No. 1; Proceedings at 60; Spring 2004; "PTP, Important to Maritime Safety, Today & Tomorrow," p. 50

Gauvin, Robert
Vol. 61, No. 1; Proceedings at 60; Spring 2004; "International Convention for the Safety of Life at Sea, 1974," p. 36

Kime, Adm. J. William
Vol. 61, No. 2; The Marine Safety Center; Summer 2004; "History of the Marine Safety Center," p. 6

Lechner, Lt. Ray
Vol. 61, No. 2; The Marine Safety Center; Summer 2004; "Subchapter O Endorsements for Gas Carriers," p. 54

Rosello, Lt. Brad J., and Reams, Lt. Cmdr. Buddy
Vol. 61, No. 2; The Marine Safety Center; Summer 2004; "Foreign Passenger Vessel Safety, The Control Verification Program," p. 61

Stern, Ens. Jim
Vol. 61, No. 1; Proceedings at 60; Spring 2004; "History of Port Security Within the Coast Guard," p. 28

Strong, Benjamin
Vol. 61, No. 3; Search and Rescue; Fall 2004; "Search and Rescue Plans of Cooperation," p. 82

Investigations
Borlase, Lt. George
Vol. 61, No. 2; The Marine Safety Center; Summer 2004; "MSC Investigations, Clued in to Marine Casualties," p. 22

Gilmour, Rear Adm. T. H.
Vol. 61, No. 2; The Marine Safety Center; Summer 2004; "Assistant Commandant's Perspective," p. 4

McAvoy, Lt. Cmdr. Kyle, and Hilbert, Lt. Patrick
Vol. 61, No. 2; The Marine Safety Center; Summer 2004; "SERT, A Valuable Resource Tool for Marine Safety Field Units," p. 17

Nadeau, Lt. Cmdr. John, and Malinoski, Lt. Zach
Vol. 61, No. 2; The Marine Safety Center; Summer 2004; "Buffalo Marine Barges Continue to Impact the Inland Tank Barge Fleet," p. 26

Schade, Lt. Derek, and Rosello, Lt. Brad J.
Vol. 61, No. 2; The Marine Safety Center; Summer 2004; "SERT, Highlights of 2003 and Plans for the Future," p. 12

ISM Code
Emond, Cmdr. Bryan
Vol. 61, No. 1; Proceedings at 60; Spring 2004; "PTP, Important to Maritime Safety, Today & Tomorrow," p. 50

Gauvin, Robert
Vol. 61, No. 1; Proceedings at 60; Spring 2004; "International Convention for the Safety of Life at Sea, 1974," p. 36

Legislation
Apps, Lt. Jeff
Vol. 61, No. 1; Proceedings at 60; Spring 2004; "International Port Security Program," p. 48

Borland, Lt. Curtis
Vol. 61, No. 4; Environmental Crimes; Winter 2004-2005; "Environmental Compliance and Homeland Security" p. 50

Ellis, Ens. Sara
Vol. 61, No. 1; Proceedings at 60; Spring 2004; "Post OPA-90, The Evolution of Coast Guard Response," p. 59

Frisch, Andrew
Vol. 61, No. 4; Environmental Crimes, Winter 2004-2005; "Environmental Crimes Case File: *Alkyon*," p. 22

Furukawa, Jon
Vol. 61, No. 1; Proceedings at 60; Spring 2004; "Merchant Mariner Documentation, An Overview of a Credential's Evolution," p. 55

Gronlund, Dr. Wayne
Vol. 61, No. 4; Environmental Crimes, Winter 2004-2005; "Mystery Oil: Who Spilled It?" p. 35

Kallen, Dawn
Vol. 61, No. 4; Environmental Crimes; Winter 2004-2005; "Illegal Sewage Discharges," p. 45

Lessons Learned
Abernathy, Bill and Chang, Naomi
Vol. 61, No. 1; Proceedings at 60; Spring 2004; "An Advancement in Safety," p. 64

Borlase, Lt. George
Vol. 61, No. 2; The Marine Safety Center; Summer 2004; "MSC Investigations, Clued in to Marine Casualties," p. 22

Frawley, Lt. Mike
Vol. 61, No. 3; Search and Rescue; Fall 2004; "*Bow Mariner*: Coast Guard Air Stations Accepting the Tragic Challenge," p. 10

Frisch, Andrew
Vol. 61, No. 4; Environmental Crimes, Winter 2004-2005; "Environmental Crimes Case File: *Alkyon*," p. 22

Marshal, Petty Officer Cindy
Vol. 61, No.3; Search and Rescue, Fall 2004; "Ice Rescue in the Great Lakes," p. 23

McAvoy, Lt. Cmdr. Kyle, and Hilbert, Lt. Patrick
Vol. 61, No. 2; The Marine Safety Center; Summer 2004; "SERT, A Valuable Resource Tool for Marine Safety Field Units," p. 17

Nadeau, Lt. Cmdr. John, and Malinoski, Lt. Zach
Vol. 61, No. 2; The Marine Safety Center; Summer 2004; "Buffalo Marine Barges Continue to Impact the Inland Tank Barge Fleet," p. 26

Norton, Capt. Dee
Vol. 61, No. 3; Search and Rescue; Fall 2004; "Benchmarking the Coast Guard's Search and Rescue System Against the World's Best," p. 58

Sawyer, Capt. Steve M.
Vol. 61, No. 3; Search and Rescue; Fall 2004; "Making Preparations for a Mass Rescue Operation," p. 43

Schade, Lt. Derek, and Rosello, Lt. Brad J.
Vol. 61, No. 2; The Marine Safety Center; Summer 2004; "SERT, Highlights of 2003 and Plans for the Future," p. 12

Licensing
Bates, Robert Stanley
Vol. 61, No. 1; Proceedings at 60; Spring 2004; "Three Ships on Maritime Licenses Continue Long Tradition," p. 17

Furukawa, Jon
Vol. 61, No. 1; Proceedings at 60; Spring 2004; "Merchant Mariner Documentation, An Overview of a Credential's Evolution," p. 55

Marine Casualties
Borlase, Lt. George
Vol. 61, No. 2; The Marine Safety Center; Summer 2004; "MSC Investigations, Clued in to Marine Casualties," p. 22

Browning, Robert M.
Vol. 61, No. 1; Proceedings at 60; Spring 2004; "Ship Ashore, An Overview of Marine Vessel Casualties," p. 11

Frawley, Lt. Mike
Vol. 61, No. 3; Search and Rescue; Fall 2004; "*Bow Mariner*: Coast Guard Air Stations Accepting the Tragic Challenge," p. 10

Gilmour, Rear Adm. T. H.
Vol. 61, No. 2; The Marine Safety Center; Summer 2004; "Assistant Commandant's Perspective," p. 4

McAvoy, Lt. Cmdr. Kyle, and Hilbert, Lt. Patrick
Vol. 61, No. 2; The Marine Safety Center; Summer 2004; "SERT, A Valuable Resource Tool for Marine Safety Field Units," p. 17

Nadeau, Lt. Cmdr. John, and Milanoski, Lt. Zach
Vol. 61, No. 2; The Marine Safety Center; Summer 2004; "Buffalo Marine Barges Continue to Impact the Inland Tank Barge Fleet," p. 26

Ovaska, Lt. Cmdr. Jeff
Vol. 61, No. 3; Search and Rescue; Fall 2004; "Search and Rescue Response System Overview," p. 6

Schade, Lt. Derek, and Rosello, Lt. Brad J.
Vol. 61, No. 2; The Marine Safety Center; Summer 2004; "SERT, Highlights of 2003 and Plans for the Future," p. 12

Marine Inspection
Ferguson, Lt. Jim
Vol. 61, No. 1; Proceedings at 60; Spring 2004; "Mariner's Seabag, Liberty Ships," p. 68

Neubauer, Lt. Cmdr. Jason D., and Kuhaneck, Scott
Vol. 61, No. 1; Proceedings at 60; Spring 2004; "Coast Guard Commences Enforcement of MTSA/ISPS Security Provisions," p. 43

Rosello, Lt. Brad J., and Reams, Lt. Cmdr. Buddy
Vol. 61, No. 2; The Marine Safety Center; Summer 2004; "Foreign Passenger Vessel Safety, The Control Verification Program," p. 61

Marine Safety
Vol. 61, No. 1; Proceedings at 60; Spring 2004; "Marine Safety Council Adds 'Security' to Name," p. 23

Vol. 61, No. 2; The Marine Safety Center; Summer 2004; "Organization," p. 8

Abernathy, Bill, and Chang, Naomi
Vol. 61, No. 1; Proceedings at 60; Spring 2004; "An Advancement in Safety," p. 64

Borlase, Lt. George
Vol. 61, No. 2; The Marine Safety Center; Summer 2004; "MSC Investigations, Clued in to Marine Casualties," p. 22

Caputo, Lt. j.g. Ron, and Kelly, Lt. Scott
Vol. 61, No. 2; The Marine Safety Center; Summer 2004; "Safety of Innovative Vessel Designs, Coast Guard Perspective in Utilizing Performance-Based Fire Protection Analysis to Create Novel Commercial Ship Designs," p. 66

Cherry, Cmdr. Timothy, and Wolf, Mark
Vol. 61, No. 2; The Marine Safety Center; Summer 2004; "Navigating the Maze of Vessel Standards and Alternate Compliance Options," p. 34

Ciaglo, Lt. Michael
Vol. 61, No. 2; The Marine Safety Center; Summer 2004; "Regulating Safety Through Engineering Standards," p. 43

Eareckson, Peter
Vol. 61, No. 2; The Marine Safety Center; Summer 2004; "Tonnage Management, Old and New," p. 37

Ellis, Ensign Sara
Vol. 61, No. 1; Proceedings at 60; Spring 2004; "Post OPA-90, The Evolution of Coast Guard Response," p. 59

Emond, Cmdr. Bryan
Vol. 61, No. 1; Proceedings at 60; Spring 2004; "PTP, Important to Maritime Safety, Today & Tomorrow," p. 50

Fink, Capt. Ernest J.
Vol. 61, No. 1; Proceedings at 60; Spring 2004; "Champion's Point of View," p. 5

Gauvin, Robert
Vol. 61, No. 1; Proceedings at 60; Spring 2004; "International Convention for the Safety of Life at Sea, 1974," p. 36

Gilmour, Rear Adm. T. H.
Vol. 61, No. 1; Proceedings at 60; Spring 2004; "Assistant Commandant's Perspective," p. 4
Vol. 61, No. 2; The Marine Safety Center; Summer 2004; "Assistant Commandant's Perspective," p. 4

Hegy, Margie
Vol. 61, No. 1; Proceedings at 60; Spring 2004; "Technology Improves Navigation Safety, Waterways Management," p. 24

Kime, Adm. J. William
Vol. 61, No. 2; The Marine Safety Center; Summer 2004; "History of the Marine Safety Center," p. 6

Kirchner, Albert G.
Vol. 61, No. 1; Proceedings at 60; Spring 2004; "Charting the Next Leg… Looking at the Course Ahead for Proceedings," p. 6

Lechner, Lt. Ray
Vol. 61, No. 2; The Marine Safety Center; Summer 2004; "Subchapter O Endorsements for Gas Carriers," p. 54

Marsilio, Cmdr. Alan
Vol. 61, No. 2; The Marine Safety Center; Summer 2004; "Coast Guard Security Plan Review, A Success Story," p. 50

McAvoy, Lt. Cmdr. Kyle, and Hilbert, Lt. Patrick
Vol. 61, No. 2; The Marine Safety Center; Summer 2004; "SERT, A Valuable Resource Tool for Marine Safety Field Units," p. 17

McAvoy, Lt. Cmdr. Kyle; Cushing, Lt. Cmdr. John; and Hecker, Lisa
Vol. 61, No. 2; The Marine Safety Center; Summer 2004; "Regulatory Complexities, The Gulf of Mexico Oil and Gas Industry," p. 57

Nadeau, Lt. Cmdr John, and Malinoski, Lt. Zach
Vol. 61, No. 2; The Marine Safety Center; Summer 2004; "Buffalo Marine Barges Continue to Impact the Inland Tank Barge Fleet," p. 26

Najarian, Lt. Holly
Vol. 61, No. 2; The Marine Safety Center; Summer 2004; "Alternative Fire Suppression/ Detection Systems," p. 48

Nash, Capt. Roy A.
Vol. 61, No. 2; The Marine Safety Center; Summer 2004; "Champion's Point of View," p. 5
Vol. 61, No. 2; The Marine Safety Center; Summer 2004; "Today's Marine Safety Center, Technical Services," p. 52

Paitl, Lt. Cmdr. Joe
Vol. 61, No. 4; Environmental Crimes; Winter 2004-2005; "U.S. Navy's Military Sealift Command" p. 57

Rosello, Lt. Brad J., and Reams, Lt. Cmdr. Buddy
Vol. 61, No. 2; The Marine Safety Center; Summer 2004; "Foreign Passenger Vessel Safety, The Control Verification Program," p. 61

Schade, Lt. Derek, and Rosello, Lt. Brad J.
Vol. 61, No. 2; The Marine Safety Center; Summer 2004; "SERT, Highlights of 2003 and Plans for the Future," p. 12

Sliwinski, Cmdr. Thaddeus
Vol. 61, No. 2; The Marine Safety Center; Summer 2004; "Where Can I Find Vessel/ Facility Security Plan Information," p. 31

Marine Safety & Security Council
Vol. 61, No. 1; Proceedings at 60; Spring 2004; "Marine Safety Council Adds 'Security' to Name," p. 23

Fink, Capt. Ernest J., and Rosen, Ellen
Vol. 61, No. 1; Proceedings at 60; Spring 2004; "Champion's Point of View," p. 5

Fink, Capt. Ernest J.
Vol. 61, No. 1; Proceedings at 60; Spring 2004; "A Look Back with Vice Adm. William F. Rea," p. 8

Gilmour, Rear Adm. T. H.
Vol. 61, No. 1; Proceedings at 60; Spring 2004; "Assistant Commandant's Perspective," p. 4

Marine Security
Vol. 61, No. 1; Proceedings at 60; Spring 2004; "Marine Safety Council Adds 'Security' to Name," p. 23

Cherry, Cmdr. Timothy, and Wolf, Mark
Vol. 61, No. 2; The Marine Safety Center; Summer 2004; "Navigating the Maze of Vessel Standards and Alternate Compliance Options," p. 34

Ellis, Ens. Sara
Vol. 61, No. 1; Proceedings at 60; Spring 2004; "Post OPA-90, The Evolution of Coast Guard Response," p. 59

Fink, Capt. Ernest J.
Vol. 61, No. 1; Proceedings at 60; Spring 2004; "Champion's Point of View," p. 5

Furukawa, Jon
Vol. 61, No. 1; Proceedings at 60; Spring 2004; "Merchant Mariner Documentation, An Overview of a Credential's Evolution," p. 55

Gilmour, Rear Adm. T. H.
Vol. 61, No. 1; Proceedings at 60; Spring 2004; "Assistant Commandant's Perspective," p. 4

Kirchner, Albert G.
Vol. 61, No. 1; Proceedings at 60; Spring 2004; "Charting the Next Leg… Looking at the Course Ahead for Proceedings," p. 6

Marsilio, Cmdr. Alan
Vol. 61, No. 2; The Marine Safety Center; Summer 2004; "Coast Guard Security Plan Review, A Success Story," p. 50

Neubauer, Lt. Cmdr. Jason D., and Kuhaneck, Scott
Vol. 61, No. 1; Proceedings at 60; Spring 2004; "Coast Guard Commences Enforcement of MTSA/ISPS Security Provisions," p. 43

Ovaska, Lt. Cmdr. Jeff
Vol. 61, No. 3; Search and Rescue; Fall 2004; "Search and Rescue Response System Overview," p. 6

Sawyer, Capt. Steve M.
Vol. 61, No. 3; Search and Rescue; Fall 2004; "Champion's Point of View," p.5

Schade, Lt. Derek, and Rosello, Lt. Brad J.
Vol. 61, No. 2; The Marine Safety Center; Summer 2004; "SERT, Highlights of 2003 and Plans for the Future," p. 12

Sirois, Rear Adm. Dennis R.
Vol. 61, No. 3; Search and Rescue; Fall 2004; "Assistant Commandant Perspective," p.4

Sliwinski, Cmdr. Thaddeus
Vol. 61, No. 2; The Marine Safety Center; Summer 2004; "Where Can I Find Vessel / Facility Security Plan Information," p. 31

Stern, Ens. Jim
Vol. 61, No. 1; Proceedings at 60; Spring 2004; "History of Port Security Within the Coast Guard," p. 28

Mariner Documentation/STCW
Furukawa, Jon
Vol. 61, No. 1; Proceedings at 60; Spring 2004; "Merchant Mariner Documentation, An Overview of a Credential's Evolution," p. 55

MARPOL
Cherry, Cmdr. Timothy, and Wolf, Mark
Vol. 61, No. 2; The Marine Safety Center; Summer 2004; "Navigating the Maze of Vessel Standards and Alternate Compliance Options," p. 34

MTSA
Marsilio, Cmdr. Alan
Vol. 61, No. 2; The Marine Safety Center; Summer 2004; "Coast Guard Security Plan Review, A Success Story," p. 50

Neubauer, Lt. Cmdr. Jason D., and Kuhaneck, Scott
Vol. 61, No. 1; Proceedings at 60; Spring 2004; "Coast Guard Commences Enforcement of MTSA/ISPS Security Provisions," p. 43

Sliwinski, Cmdr. Thaddeus
Vol. 61, No. 2; The Marine Safety Center; Summer 2004; "Where Can I Find Vessel / Facility Security Plan Information," p. 31

Naval Architecture
Bates, Robert Stanley
Vol. 61, No. 1; Proceedings at 60; Spring 2004; "Three Ships on Maritime Licenses Continue Long Tradition," p. 17

Caputo, Lt.j.g. Ron, and Kelly, Lt. Scott
Vol. 61, No. 2; The Marine Safety Center; Summer 2004; "Safety of Innovative Vessel Designs, Coast Guard Perspective in Utilizing Performance-Based Fire Protection Analysis to Create Novel Commercial Ship Designs," p. 66

Ciaglo, Lt. Michael
Vol. 61, No. 2; The Marine Safety Center; Summer 2004; "Regulating Safety Through Engineering Standards," p. 43

Eareckson, Peter
Vol. 61, No. 2; The Marine Safety Center; Summer 2004; "Tonnage Management, Old and New," p. 37

Ferguson, Lt. Jim
Vol. 61, No. 1; Proceedings at 60; Spring 2004; "Mariner's Seabag, Liberty Ships," p. 68

Nash, Capt. Roy A.
Vol. 61, No. 2; The Marine Safety Center; Summer 2004; "Champion's Point of View," p. 5

Navigation
Browning, Robert M.
Vol. 61, No. 1; Proceedings at 60; Spring 2004; "Ship Ashore, An Overview of Marine Vessel Casualties," p. 11

Hegy, Margie
Vol. 61, No. 1; Proceedings at 60; Spring 2004; "Technology Improves Navigation Safety, Waterways Management," p. 24

Off-Shore Installations
McAvoy, Lt. Cmdr. Kyle; Cushing, Lt. Cmdr. John; and Hecker, Lisa
Vol. 61, No. 2; The Marine Safety Center; Summer 2004; "Regulatory Complexities, The Gulf of Mexico Oil and Gas Industry," p. 57

OPA-90
Ellis, Ens. Sara
Vol. 61, No. 1; Proceedings at 60; Spring 2004; "Post OPA-90, The Evolution of Coast Guard Response," p. 59

Passenger Vessels
Bates, Robert Stanley
Vol. 61, No. 1; Proceedings at 60; Spring 2004; "Three Ships on Maritime Licenses Continue Long Tradition," p. 17

Gilmour, Rear Adm. T. H.
Vol. 61, No. 2; The Marine Safety Center; Summer 2004; "Assistant Commandant's Perspective," p. 4

Rosello, Lt. Brad J., and Reams, Lt. Cmdr. Buddy
Vol. 61, No. 2; The Marine Safety Center; Summer 2004; "Foreign Passenger Vessel Safety, The Control Verification Program," p. 61

Port Security
Apps, Lt. Jeff
Vol. 61, No. 1; Proceedings at 60; Spring 2004; "International Port Security Program," p. 48

Emond, Cmdr. Bryan
Vol. 61, No. 1; Proceedings at 60; Spring 2004; "PTP, Important to Maritime Safety, Today & Tomorrow," p. 50

Gauvin, Robert
Vol. 61, No. 1; Proceedings at 60; Spring 2004; "International Convention for the Safety of Life at Sea, 1974," p. 36

Neubauer, Lt. Cmdr. Jason D., and Kuhaneck, Scott
Vol. 61, No. 1; Proceedings at 60; Spring 2004; "Coast Guard Commences Enforcement of MTSA/ISPS Security Provisions," p. 43

Stern, Ens. Jim
Vol. 61, No. 1; Proceedings at 60; Spring 2004; "History of Port Security Within the Coast Guard," p. 28

P-T-P
Abernathy, Bill, and Chang, Naomi
Vol. 61, No. 1; Proceedings at 60; Spring 2004; "An Advancement in Safety," p. 64

Abernathy, Bill, and McLaughlin, Diana
Vol. 61, No. 4; Environmental Crimes; Winter 2004-2005; "Slime and Punishment," p. 54

Ellis, Ens. Sara
Vol. 61, No. 1; Proceedings at 60; Spring 2004; "Post OPA-90, The Evolution of Coast Guard Response," p. 59

Emond, Cmdr. Bryan
Vol. 61, No. 1; Proceedings at 60; Spring 2004; "PTP, Important to Maritime Safety, Today & Tomorrow," p. 50

Myers, Joseph
Vol. 61, No. 3; Search and Rescue; Fall 2004; "Search and Rescue: The Last Safeguard," p. 84

Regulations
Vol. 61, No. 2; The Marine Safety Center; Summer 2004; "Organization," p. 8

Abernathy, Bill, and Chang, Naomi
Vol. 61, No. 1; Proceedings at 60; Spring 2004; "An Advancement in Safety," p. 64

Abernathy, Bill, and McLaughlin, Diana
Vol. 61, No. 4; Environmental Crimes; Winter 2004-2005; "Slime and Punishment," p. 54

Apps, Lt. Jeff
Vol. 61, No. 1; Proceedings at 60; Spring 2004; "International Port Security Program," p. 48

Borland, Lt. Curtis
Vol. 61, No. 4; Environmental Crimes; Winter 2004-2005; "Environmental Compliance and Homeland Security," p. 50

Caputo, Lt.j.g. Ron, and Kelly, Lt. Scott
Vol. 61, No. 2; The Marine Safety Center; Summer 2004; "Safety of Innovative Vessel Designs, Coast Guard Perspective in Utilizing Performance-Based Fire Protection Analysis to Create Novel Commercial Ship Designs," p. 66

Cherry, Cmdr. Timothy, and Wolf, Mark
Vol. 61, No. 2; The Marine Safety Center; Summer 2004; "Navigating the Maze of Vessel Standards and Alternate Compliance Options," p. 34

Ciaglo, Lt. Michael
Vol. 61, No. 2; The Marine Safety Center; Summer 2004; "Regulating Safety Through Engineering Standards," p. 43

Clark, Cmdr. Brad
Vol. 61, No. 3; Safe and Rescue; Fall 2004; "Command Center Team's New Quarterback," p. 68

Coutu, Lt. Christopher
Vol. 61, No. 4; Environmental Crimes; Winter 2004-2005; "Tackling the Oily Water Separator Issue," p. 11

Eareckson, Peter
Vol. 61, No. 2; The Marine Safety Center; Summer 2004; "Tonnage Management, Old and New," p. 37

Edwards, Dave
Vol. 61, No. 3; Fall 2004; Search and Rescue; "Search and Rescue Engagement," p. 35

Ellis, Ens. Sara
Vol. 61, No. 1; Proceedings at 60; Spring 2004; "Post OPA-90, The Evolution of Coast Guard Response," p. 59

Emond, Cmdr. Bryan
Vol. 61, No. 1; Proceedings at 60; Spring 2004; "PTP, Important to Maritime Safety, Today & Tomorrow," p. 50

Ferguson, Lt. Jim
Vol. 61, No. 1; Proceedings at 60; Spring 2004; "Mariner's Seabag, Liberty Ships," p. 68

Fink, Capt. Ernest J., and Rosen, Ellen
Vol. 61, No. 1; Proceedings at 60; Spring 2004; "A Look Back with Vice Adm. William F. Rea," p. 8

French, Capt. Arthur J. III
Vol. 61, No. 3; Search and Rescue; Fall 2004; "Emergency Medical Services in Coast Guard Search and Rescue," p.19

Frisch, Andrew
Vol. 61, No. 4; Environmental Crimes, Winter 2004-2005; "Environmental Crimes Case File: *Alkyon*," p. 22

Furukawa, Jon
Vol. 61, No. 1; Proceedings at 60; Spring 2004; "Merchant Mariner Documentation, An Overview of a Credential's Evolution," p. 55

Gauvin, Robert
Vol. 61, No. 1; Proceedings at 60; Spring 2004; "International Convention for the Safety of Life at Sea, 1974," p. 36

Gilmour, Rear Adm. T. H.
Vol. 61, No. 1; Proceedings at 60; Spring 2004; "Assistant Commandant's Perspective," p. 4.
Vol. 61, No. 2; The Marine Safety Center; Summer 2004; "Assistant Commandant's Perspective," p. 4

Gonzalez, Lt. Cmdr. Johnny
Vol. 61, No. 3; Search and Rescue, Fall 2004; "Search and Rescue in the Eastern Caribbean," p. 27

Gronlund, Dr. Wayne
Vol. 61, No. 4; Environmental Crimes, Winter 2004-2005; "Mystery Oil: Who Spilled It?" p. 35

Hegy, Margie
Vol. 61, No. 1; Proceedings at 60; Spring 2004; "Technology Improves Navigation Safety, Waterways Management," p. 24

Hollis, Lt. Robert Bryan
Vol. 61, No. 3; Search and Rescue; Fall 2004; "So That Others May Live," p. 64

Kallen, Dawn
Vol. 61, No. 4; Environmental Crimes; Winter 2004-2005; "Illegal Sewage Discharges," p. 45

Kime, Adm. J. William
Vol. 61, No. 2; The Marine Safety Center; Summer 2004; "History of the Marine Safety Center," p. 6

Kirchner, Albert G.
Vol. 61, No. 1; Proceedings at 60; Spring 2004; "Charting the Next Leg… Looking at the Course Ahead for Proceedings," p. 6

Lechner, Lt. Ray
Vol. 61, No. 2; The Marine Safety Center; Summer 2004; "Subchapter O Endorsements for Gas Carriers," p. 54

Lee, Capt. Dean
Vol. 61, No. 3; Search and Rescue; Fall 2004; "Two Countries, Two Boats, One Common Cause- Who Leads the Pack?" p. 50

Lemon, Dan
Vol. 61, No. 3; Fall 204; Search and Rescue; "Search and Rescue Responsibilities- The Big Picture," p. 31

Linsin, Gregory
Vol. 61, No. 4; Environmental Crimes; Winter 2004-2005; "Exercise of Prosecutorial Discretion in Vessel Pollution Cases," p. 13

Manzi, Kathryn
Vol. 61, No. 3; Search and Rescue, Fall 2004; "Improving Communications to Save Lives in the 21st Century," p. 71

Marsilio, Cmdr. Alan
Vol. 61, No. 2; The Marine Safety Center; Summer 2004; "Coast Guard Security Plan Review, A Success Story," p. 50

McAvoy, Lt. Cmdr. Kyle, and Hilbert, Lt. Patrick
Vol. 61, No. 2; The Marine Safety Center; Summer 2004; "SERT, A Valuable Resource Tool for Marine Safety Field Units," p. 17

McAvoy, Lt. Cmdr. Kyle, Cushing, Lt. Cmdr. John, and Hecker, Lisa
Vol. 61, No. 2; The Marine Safety Center; Summer 2004; "Regulatory Complexities, The Gulf of Mexico Oil and Gas Industry," p. 57

Nadeau, Lt. Cmdr. John, and Malinoski, Lt. Zach
Vol. 61, No. 2; The Marine Safety Center; Summer 2004; "Buffalo Marine Barges Continue to Impact the Inland Tank Barge Fleet," p. 26

Najarian, Lt. Holly
Vol. 61, No. 2; The Marine Safety Center; Summer 2004; "Alternative Fire Suppression/Detection Systems," p. 48

Nash, Capt. Roy A.
Vol. 61, No. 2; The Marine Safety Center; Summer 2004; "Champion's Point of View," p. 5
Vol. 61, No. 2; The Marine Safety Center; Summer 2004; "Today's Marine Safety Center, Technical Services," p. 52

Neubauer, Lt. Cmdr. Jason D., and Kuhaneck, Scott
Vol. 61, No. 1; Proceedings at 60; Spring 2004; "Coast Guard Commences Enforcement of MTSA/ISPS Security Provisions," p. 43

Norton, Capt. Dee
Vol. 61, No. 3; Search and Rescue; Fall 2004; "Benchmarking the Coast Guard's Search and Rescue System Against the World's Best," p. 58

Olsen, Ken
Vol. 61, No. 4; Environmental Crimes, Winter 2004-2005; "Improving Environmental Performance," p. 41

Ovaska, Lt. Cmdr. Jeff
Vol. 61, No. 3; Search and Rescue; Fall 2004; "Search and Rescue Response System Overview," p. 6

Paitl, Lt. Cmdr. Joe
Vol. 61, No. 4; Environmental Crimes; Winter 2004-2005; "U.S. Navy's Military Sealift Command," p. 57

Pickles, Lt. Daniel
Vol. 61, No. 3; Search and Rescue; Fall 2004; "Rescue of *Miss Judith*," p. 46

Rosello, Lt. Brad J., and Reams, Lt. Cmdr. Buddy
Vol. 61, No. 2; The Marine Safety Center; Summer 2004; "Foreign Passenger Vessel Safety, The Control Verification Program," p. 61

Schade, Lt. Derek, and Rosello, Lt. Brad J.
Vol. 61, No. 2; The Marine Safety Center; Summer 2004; "SERT, Highlights of 2003 and Plans for the Future," p. 12

Sliwinski, Cmdr. Thaddeus
Vol. 61, No. 2; The Marine Safety Center; Summer 2004; "Where Can I Find Vessel/ Facility Security Plan Information," p. 31

Spivak, Wayne
Vol. 61, No. 3; Search and Rescue; Fall 2004; "The Caribbean Volunteer Maritime Search and Rescue Initiative," p.15

Stern, Ens. Jim
Vol. 61, No. 1; Proceedings at 60; Spring 2004; "History of Port Security Within the Coast Guard," p. 28

Stilleke, Cmdr. Steve
Vol. 61, No. 3; Search and Rescue; Fall 2004; "Civilian Search and Rescue Controllers: Who Needs Them? We Do!" p. 62

Strong, Benjamin
Vol. 61, No. 3; Search and Rescue; Fall 2004; "Search and Rescue Plans of Cooperation," p. 82

Stuber, Chief Warrant Officer Kenneth D.
Vol. 61, No. 3; Search and Rescue; Fall 2004; "Storm Warriors in the 21st Century," p. 55

Willis, Thomas
Vol. 61, No. 1; Proceedings at 60; Spring 2004; "Coast Guard's Oldest Function Enters the 21st Century," p. 39

Safety Equipment

Craft, Chief Petty Officer Douglas
Vol. 61, No. 1; Proceedings at 60; Spring 2004; "Leveraging IT to Better Serve the Maritime Industry," p. 33

Ferguson, Lt. Jim
Vol. 61, No. 1; Proceedings at 60; Spring 2004; "Mariner's Seabag, Liberty Ships," p. 68

Najarian, Lt. Holly
Vol. 61, No. 2; The Marine Safety Center; Summer 2004; "Alternative Fire Suppression/Detection Systems," p. 48

Search & Rescue

Browning, Robert M.
Vol. 61, No. 1; Proceedings at 60; Spring 2004; "Ship Ashore, An Overview of Marine Vessel Casualties," p. 11

Clark, Cmdr. Brad
Vol. 61, No. 3; Safe and Rescue; Fall 2004; "Command Center Team's New Quarterback," p. 68

Edwards, Dave
Vol. 61, No. 3; Fall 2004; Search and Rescue; "Search and Rescue Engagement," p. 35

Frawley, Lt. Mike
Vol. 61, No. 3; Search and Rescue; Fall 2004; "*Bow Mariner*: Coast Guard Air Stations Accepting the Tragic Challenge," p. 10

French, Capt. Arthur J. III
Vol. 61, No. 3; Search and Rescue; Fall 2004; "Emergency Medical Services in Coast Guard Search and Rescue," p.19

Frost, J.R., and Netsch, Robert
Vol. 61, No. 3; Search and Rescue; Fall 2004; "The Search and Rescue Optimal Planning System," p. 74

Gonzalez, Lt. Cmdr. Johnny
Vol. 61, No. 3; Search and Rescue, Fall 2004; "Search and Rescue in the Eastern Caribbean," p. 27

Hollis, Lt. Robert Bryan
Vol. 61, No. 3; Search and Rescue; Fall 2004; "So That Others May Live," p. 64

Howard, Beverly
Vol. 61, No. 3; Search and Rescue; Fall 2004; "The Amver Program- Matching Distress Calls with the Vessel(s) Best Suited to Respond," p. 38

Lee, Capt. Dean
Vol. 61, No. 3; Search and Rescue; Fall 2004; "Two Countries, Two Boats, One Common Cause- Who Leads the Pack?" p. 50

Leese, Ens. Eric D.
Vol. 61, No. 3; Search and Rescue; Fall 2004 "2003 Association for Search and Rescue at Sea Award Recipient," p. 41

Lemon, Dan
Vol. 61, No. 3; Fall 204; Search and Rescue; "Search and Rescue Responsibilities- The Big Picture," p. 31

Manzi, Kathryn
Vol. 61, No. 3; Search and Rescue, Fall 2004; "Improving Communications to Save Lives in the 21st Century," p. 71

Marshal, Petty Officer Cindy
Vol. 61, No.3; Search and Rescue, Fall 2004; "Ice Rescue in the Great Lakes,"p. 23

Myers, Joseph
Vol. 61, No. 3; Search and Rescue; Fall 2004; "Search and Rescue: The Last Safeguard," p. 84

Norton, Capt. Dee
Vol. 61, No. 3; Search and Rescue; Fall 2004; "Benchmarking the Coast Guard's Search and Rescue System Against the World's Best," p. 58

Ovaska, Lt. Cmdr. Jeff
Vol. 61, No. 3; Search and Rescue; Fall 2004; "Search and Rescue Response System Overview," p. 6

Pickles, Lt. Daniel
Vol. 61, No. 3; Search and Rescue; Fall 2004; "Rescue of *Miss Judith*," p. 46

Rochon, Rear Adm. Stephen W.
Vol. 61, No. 3; Search and Rescue; Fall 2004; "Bravery Against All Odds: The Pea Island Rescue Retold Over a Century Later," p. 87

Sawyer, Capt. Steve M.
Vol. 61, No. 3; Search and Rescue; Fall 2004; "Champion's Point of View," p.5
Vol. 61, No. 3; Search and Rescue; Fall 2004; "Making Preparations for a Mass Rescue Operation," p. 43

Schaefer, Richard
Vol. 61, No. 3; Search and Rescue; Fall 2004; "Self-Locating Datum Marker Buoys-Technology Overdue, but Right on Time!" p. 78

Sirois, Rear Adm. Dennis R.
Vol. 61, No. 3; Search and Rescue; Fall 2004; "Assistant Commandant Perspective," p.4

Spivak, Wayne
Vol. 61, No. 3; Search and Rescue; Fall 2004; "The Caribbean Volunteer Maritime Search and Rescue Initiative," p.15

Stilleke, Cmdr. Steve
Vol. 61, No. 3; Search and Rescue; Fall 2004; "Civilian Search and Rescue Controllers: Who Needs Them? We Do!" p. 62

Strong, Benjamin
Vol. 61, No. 3; Search and Rescue; Fall 2004; "Search and Rescue Plans of Cooperation," p. 82

Stuber, Chief Warrant Officer Kenneth D.
Vol. 61, No. 3; Search and Rescue; Fall 2004; "Storm Warriors in the 21st Century," p. 55

Ship Design

Bates, Robert Stanley
Vol. 61, No. 1; Proceedings at 60; Spring 2004; "Three Ships on Maritime Licenses Continue Long Tradition," p. 17

Caputo, Lt. j.g. Ron, and Kelly, Lt. Scott
Vol. 61, No. 2; The Marine Safety Center; Summer 2004; "Safety of Innovative Vessel Designs, Coast Guard Perspective in Utilizing Performance-Based Fire Protection Analysis to Create Novel Commercial Ship Designs," p. 66

Ciaglo, Lt. Michael
Vol. 61, No. 2; The Marine Safety Center; Summer 2004; "Regulating Safety Through Engineering Standards," p. 43

Eareckson, Peter
Vol. 61, No. 2; The Marine Safety Center; Summer 2004; "Tonnage Management, Old and New," p. 37

Ellis, Ens. Sara
Vol. 61, No. 1; Proceedings at 60; Spring 2004; "Post OPA-90, The Evolution of Coast Guard Response," p. 59

Ferguson, Lt. Jim
Vol. 61, No. 1; Proceedings at 60; Spring 2004; "Mariner's Seabag, Liberty Ships," p. 68

Kime, Adm. J. William
Vol. 61, No. 2; The Marine Safety Center; Summer 2004; "History of the Marine Safety Center," p. 6

Lechner, Lt. Ray
Vol. 61, No. 2; The Marine Safety Center; Summer 2004; "Subchapter O Endorsements for Gas Carriers," p. 54

Lee, Capt. Dean
Vol. 61, No. 3; Search and Rescue; Fall 2004; "Two Countries, Two Boats, One Common Cause- Who Leads the Pack?" p. 50

Nash, Capt. Roy A.
Vol. 61, No. 2; The Marine Safety Center; Summer 2004; "Champion's Point of View," p. 5

Sawyer, Capt. Steve M.
Vol. 61, No. 3; Search and Rescue; Fall 2004; "Making Preparations for a Mass Rescue Operation," p. 43

Willis, Thomas
Vol. 61, No. 1; Proceedings at 60; Spring 2004; "Coast Guard's Oldest Function Enters the 21st Century," p. 39

SOLAS
Browning, Robert M.
Vol. 61, No. 1; Proceedings at 60; Spring 2004; "Ship Ashore, An Overview of Marine Vessel Casualties," p. 11

Cherry, Cmdr. Timothy, and Wolf, Mark
Vol. 61, No. 2; The Marine Safety Center; Summer 2004; "Navigating the Maze of Vessel Standards and Alternate Compliance Options," p. 34

Frawley, Lt. Mike
Vol. 61, No. 3; Search and Rescue; Fall 2004; "*Bow Mariner*: Coast Guard Air Stations Accepting the Tragic Challenge," p. 10

French, Capt. Arthur J. III
Vol. 61, No. 3; Search and Rescue; Fall 2004; "Emergency Medical Services in Coast Guard Search and Rescue," p.19

Gauvin, Robert
Vol. 61, No. 1; Proceedings at 60; Spring 2004; "International Convention for the Safety of Life at Sea, 1974," p. 36

Gonzalez, Lt. Cmdr. Johnny
Vol. 61, No. 3; Search and Rescue, Fall 2004; "Search and Rescue in the Eastern Caribbean," p. 27

Hollis, Lt. Robert Bryan
Vol. 61, No. 3; Search and Rescue; Fall 2004; "So That Others May Live," p. 64

Howard, Beverly
Vol. 61, No. 3; Search and Rescue; Fall 2004; "The Amver Program, Matching Distress Calls with the Vessel(s) Best Suited to Respond," p. 38

Lemon, Dan
Vol. 61, No. 3; Fall 204; Search and Rescue; "Search and Rescue Responsibilities, The Big Picture," p. 31

Manzi, Kathryn
Vol. 61, No. 3; Search and Rescue, Fall 2004; "Improving Communications to Save Lives in the 21st Century," p. 71

Neubauer, Lt. Cmdr. Jason D., and Kuhaneck, Scott
Vol. 61, No. 1; Proceedings at 60; Spring 2004; "Coast Guard Commences Enforcement of MTSA/ISPS Security Provisions," p. 43

Ovaska, Lt. Cmdr. Jeff
Vol. 61, No. 3; Search and Rescue; Fall 2004; "Search and Rescue Response System Overview," p. 6

Pickles, Lt. Daniel
Vol. 61, No. 3; Search and Rescue; Fall 2004; "Rescue of *Miss Judith*," p. 46

Rosello, Lt. Brad J., and Reams, Lt. Cmdr. Buddy
Vol. 61, No. 2; The Marine Safety Center; Summer 2004; "Foreign Passenger Vessel Safety, The Control Verification Program," p. 61

Sawyer, Capt. Steve M.
Vol. 61, No. 3; Search and Rescue; Fall 2004; "Making Preparations for a Mass Rescue Operation," p. 43

Spivak, Wayne
Vol. 61, No. 3; Search and Rescue; Fall 2004; "The Caribbean Volunteer Maritime Search and Rescue Initiative," p.15

Stern, Ens. Jim
Vol. 61, No. 1; Proceedings at 60; Spring 2004; "History of Port Security Within the Coast Guard," p. 28

Strong, Benjamin
Vol. 61, No. 3; Search and Rescue; Fall 2004; "Search and Rescue Plans of Cooperation," p. 82

Tank Ships
Bates, Robert Stanley
Vol. 61, No. 1; Proceedings at 60; Spring 2004; "Three Ships on Maritime Licenses Continue Long Tradition," p. 17

Lechner, Lt. Ray
Vol. 61, No. 2; The Marine Safety Center; Summer 2004; "Subchapter O Endorsements for Gas Carriers," p. 54

McAvoy, Lt. Cmdr. Kyle; Cushing, Lt. Cmdr. John; and Hecker, Lisa
Vol. 61, No. 2; The Marine Safety Center; Summer 2004; "Regulatory Complexities, The Gulf of Mexico Oil and Gas Industry," p. 57

Technology
Borlase, Lt. George
Vol. 61, No. 2; The Marine Safety Center; Summer 2004; "MSC Investigations, Clued in to Marine Casualties," p. 22

Caputo, Lt. j.g. Ron, and Kelly, Lt. Scott
Vol. 61, No. 2; The Marine Safety Center; Summer 2004; "Safety of Innovative Vessel Designs, Coast Guard Perspective in Utilizing Performance-Based Fire Protection Analysis to Create Novel Commercial Ship Designs," p. 66

Ciaglo, Lt. Michael
Vol. 61, No. 2; The Marine Safety Center; Summer 2004; "Regulating Safety Through Engineering Standards," p. 43

Craft, Chief Petty Officer Douglas
Vol. 61, No. 1; Proceedings at 60; Spring 2004; "Leveraging IT to Better Serve the Maritime Industry," p. 33

Eareckson, Peter
Vol. 61, No. 2; The Marine Safety Center; Summer 2004; "Tonnage Management, Old and New," p. 37

Fink, Capt. Ernest J., and Rosen, Ellen
Vol. 61, No. 1; Proceedings at 60; Spring 2004; "A Look Back with Vice Adm. William F. Rea," p. 8

Frawley, Lt. Mike
Vol. 61, No. 3; Search and Rescue; Fall 2004; "*Bow Mariner*: Coast Guard Air Stations Accepting the Tragic Challenge," p. 10

French, Capt. Arthur J. III
Vol. 61, No. 3; Search and Rescue; Fall 2004; "Emergency Medical Services in Coast Guard Search and Rescue," p.19

Frost, J.R., and Netsch, Robert
Vol. 61, No. 3; Search and Rescue; Fall 2004; "The Search and Rescue Optimal Planning System," p. 74

Gilmour, Rear Adm. T. H.
Vol. 61, No. 2; The Marine Safety Center; Summer 2004; "Assistant Commandant's Perspective," p. 4

Gonzalez, Lt. Cmdr. Johnny
Vol. 61, No. 3; Search and Rescue, Fall 2004; "Search and Rescue in the Eastern Caribbean," p. 27

Gronlund, Dr. Wayne
Vol. 61, No. 4; Environmental Crimes, Winter 2004-2005; "Mystery Oil: Who Spilled It?" p. 35

Hegy, Margie
Vol. 61, No. 1; Proceedings at 60; Spring 2004; "Technology Improves Navigation Safety, Waterways Management," p. 24

Hollis, Lt. Robert Bryan
Vol. 61, No. 3; Search and Rescue; Fall 2004; "So That Others May Live," p. 64

Howard, Beverly
Vol. 61, No. 3; Search and Rescue; Fall 2004; "The Amver Program- Matching Distress Calls with the Vessel(s) Best Suited to Respond," p. 38

Kallen, Dawn
Vol. 61, No. 4; Environmental Crimes; Winter 2004-2005; "Illegal Sewage Discharges," p. 45

Lechner, Lt. Ray
Vol. 61, No. 2; The Marine Safety Center; Summer 2004; "Subchapter O Endorsements for Gas Carriers," p. 54

Lee, Capt. Dean
Vol. 61, No. 3; Search and Rescue; Fall 2004; "Two Countries, Two Boats, One Common Cause- Who Leads the Pack?" p. 50

Leese, Ens. Eric D.
Vol. 61, No. 3; Search and Rescue; Fall 2004 "2003 Association for Search and Rescue at Sea Award Recipient," p. 41

Lemon, Dan
Vol. 61, No. 3; Fall 204; Search and Rescue; "Search and Rescue Responsibilities- The Big Picture," p. 31

McAvoy, Lt. Cmdr. Kyle; Cushing, Lt. Cmdr. John; and Hecker, Lisa
Vol. 61, No. 2; The Marine Safety Center; Summer 2004; "Regulatory Complexities, The Gulf of Mexico Oil and Gas Industry," p. 57

Manzi, Kathryn
Vol. 61, No. 3; Search and Rescue, Fall 2004; "Improving Communications to Save Lives in the 21st Century," p. 71

Marshal, Petty Officer Cindy
Vol. 61, No.3; Search and Rescue, Fall 2004; "Ice Rescue in the Great Lakes,"p. 23

Nadeau, Lt. Cmdr John, and Malinoski, Lt. Zach
Vol. 61, No. 2; The Marine Safety Center; Summer 2004; "Buffalo Marine Barges Continue to Impact the Inland Tank Barge Fleet," p. 26

Najarian, Lt. Holly
Vol. 61, No. 2; The Marine Safety Center; Summer 2004; "Alternative Fire Suppression/Detection Systems," p. 48

Nash, Capt. Roy A.
Vol. 61, No. 2; The Marine Safety Center; Summer 2004; "Champion's Point of View," p. 5
Vol. 61, No. 2; The Marine Safety Center; Summer 2004; "Today's Marine Safety Center, Technical Services," p. 52

Olsen, Ken
Vol. 61, No. 4; Environmental Crimes; Winter 2004-2005; "Wastes and Machinery Space Maintenance," p. 19
Vol. 61, No. 4; Environmental Crimes, Winter 2004-2005; "Improving Environmental Performance," p. 41

Ovaska, Lt. Cmdr. Jeff
Vol. 61, No. 3; Search and Rescue; Fall 2004; "Search and Rescue Response System Overview," p. 6

Pickles, Lt. Daniel
Vol. 61, No. 3; Search and Rescue; Fall 2004; "Rescue of *Miss Judith*," p. 46

Rosello, Lt. Brad J., and Reams, Lt. Cmdr. Buddy
Vol. 61, No. 2; The Marine Safety Center; Summer 2004; "Foreign Passenger Vessel Safety, The Control Verification Program," p. 61

Sawyer, Capt. Steve M.
Vol. 61, No. 3; Search and Rescue; Fall 2004; "Making Preparations for a Mass Rescue Operation," p. 43

Schade, Lt. Derek, and Rosello, Lt. Brad J.
Vol. 61, No. 2; The Marine Safety Center; Summer 2004; "SERT, Highlights of 2003 and Plans for the Future," p. 12

Schaefer, Richard
Vol. 61, No. 3; Search and Rescue; Fall 2004; "Self-Locating Datum Marker Buoys-Technology Overdue, but Right on Time!" p. 78

Sliwinski, Cmdr. Thaddeus
Vol. 61, No. 2; The Marine Safety Center; Summer 2004; "Where Can I Find Vessel/ Facility Security Plan Information," p. 31

Strong, Benjamin
Vol. 61, No. 3; Search and Rescue; Fall 2004; "Search and Rescue Plans of Cooperation," p. 82

Stuber, Chief Warrant Officer Kenneth D.
Vol. 61, No. 3; Search and Rescue; Fall 2004; "Storm Warriors in the 21st Century," p. 55

Tonnage
Eareckson, Peter
Vol. 61, No. 2; The Marine Safety Center; Summer 2004; "Tonnage Management, Old and New," p. 37

Neubauer, Lt. Cmdr. Jason D., and Kuhaneck, Scott
Vol. 61, No. 1; Proceedings at 60; Spring 2004; "Coast Guard Commences Enforcement of MTSA/ISPS Security Provisions," p. 43

Towing Vessels
Bates, Robert Stanley
Vol. 61, No. 1; Proceedings at 60; Spring 2004; "Three Ships on Maritime Licenses Continue Long Tradition," p. 17

Vessel Documentation
Cherry, Cmdr. Timothy, and Wolf, Mark
Vol. 61, No. 2; The Marine Safety Center; Summer 2004; "Navigating the Maze of Vessel Standards and Alternate Compliance Options," p. 34

Neubauer, Lt. Cmdr. Jason D., and Kuhaneck, Scott
Vol. 61, No. 1; Proceedings at 60; Spring 2004; "Coast Guard Commences Enforcement of MTSA/ISPS Security Provisions," p. 43

Willis, Thomas
Vol. 61, No. 1; Proceedings at 60; Spring 2004; "Coast Guard's Oldest Function Enters the 21st Century," p. 39

Waterways Management
Hegy, Margie
Vol. 61, No. 1; Proceedings at 60; Spring 2004; "Technology Improves Navigation Safety, Waterways Management," p. 24

Abernathy, Bill
Vol. 61, No. 1; Proceedings at 60; Spring 2004; "An Advancement in Safety," p. 64
Vol. 61, No. 4; Environmental Crimes; Winter 2004-2005; "Slime and Punishment," p. 54

Apps, Lt. Jeff
Vol. 61, No. 1; Proceedings at 60; Spring 2004; "International Port Security Program," p. 48

Bates, Robert Stanley
Vol. 61, No. 1; Proceedings at 60; Spring 2004; "Three Ships on Maritime Licenses Continue Long Tradition," p. 17

Baumgartner, Capt. William
Vol. 61, No. 4; Environmental Crimes; Winter 2004-2005; "Environmental Enforcement Actions," p. 6

Beistle, Cmdr. Thomas
Vol. 61, No. 4; Environmental Crimes; Winter 2004-2005; "Environmental Enforcement Actions," p. 6

Borland, Lt. Curtis
Vol. 61, No. 4; Environmental Crimes; Winter 2004-2005; "Environmental Compliance and Homeland Security," p. 50

Borlase, Lt. George
Vol. 61, No. 2; The Marine Safety Center; Summer 2004; "MSC Investigations, Clued in to Marine Casualties," p. 22

Browning, Robert M.
Vol. 61, No. 1; Proceedings at 60; Spring 2004; "Ship Ashore, An Overview of Marine Vessel Casualties," p. 11

Caputo, Lt. j.g. Ron
Vol. 61, No. 2; The Marine Safety Center; Summer 2004; "Safety of Innovative Vessel Designs, Coast Guard Perspective in Utilizing Performance-Based Fire Protection Analysis to Create Novel Commercial Ship Designs," p. 66

Chang, Naomi
Vol. 61, No. 1; Proceedings at 60; Spring 2004; "An Advancement in Safety," p. 64

Cherry, Cmdr. Timothy
Vol. 61, No. 2; The Marine Safety Center; Summer 2004; "Navigating the Maze of Vessel Standards and Alternate Compliance Options," p. 34

Ciaglo, Lt. Michael
Vol. 61, No. 2; The Marine Safety Center; Summer 2004; "Regulating Safety Through Engineering Standards," p. 43

Clark, Cmdr. Brad
Vol. 61, No. 3; Search and Rescue; Fall 2004; "Command Center Team's New Quarterback," p. 68

Connors, Lt. Cmdr. Timothy
Vol. 61, No. 4; Environmental Crimes; Winter 2004-2005; "Environmental Enforcement Actions," p. 6

Coutu, Lt. Christopher
Vol. 61, No. 4; Environmental Crimes; Winter 2004-2005; "Tacking the Oily Water Separator Issues," p. 11

Craft, Chief Petty Officer Douglas
Vol. 61, No. 1; Proceedings at 60; Spring 2004; "Leveraging IT to Better Serve the Maritime Industry," p. 33

Cushing, Lt. Cmdr. John
Vol. 61, No. 2; The Marine Safety Center; Summer 2004; "Regulatory Complexities, The Gulf of Mexico Oil and Gas Industry," p. 57

Eareckson, Peter
Vol. 61, No. 2; The Marine Safety Center; Summer 2004; "Tonnage Management, Old and New," p. 37

Edwards, Dave
Vol. 61, No. 3; Fall 2004; Search and Rescue; "Search and Rescue Engagement," p. 35

Ellis, Ens. Sara
Vol. 61, No. 1; Proceedings at 60; Spring 2004; "Post OPA-90, The Evolution of Coast Guard Response," p. 59

Emond, Cmdr. Bryan
Vol. 61, No. 1; Proceedings at 60; Spring 2004; "PTP, Important to Maritime Safety, Today & Tomorrow," p. 50

Environmental Crimes Section, U.S. Department of Justice
Vol. 61, No. 4; Environmental Crimes, Winter 2004-2005; "Vessel Pollution and Related Maritime Offenses, 1989-2004," p. 25

Ferguson, Lt. Jim
Vol. 61, No. 1; Proceedings at 60; Spring 2004; "Mariner's Seabag, Liberty Ships," p. 68

Fink, Capt. Ernest J.
Vol. 61, No. 1; Proceedings at 60; Spring 2004; "Champion's Point of View," p. 5
Vol. 61, No. 1; Proceedings at 60; Spring 2004; "A Look Back with Vice Adm. William F. Rea," p. 8

Frawley, Lt. Mike
Vol. 61, No. 3; Search and Rescue; Fall 2004; "*Bow Mariner*: Coast Guard Air Stations Accepting the Tragic Challenge," p. 10

French, Capt. Arthur J. III
Vol. 61, No. 3; Search and Rescue; Fall 2004; "Emergency Medical Services in Coast Guard Search and Rescue," p. 19

Frisch, Andrew
Vol. 61, No. 4; Environmental Crimes, Winter 2004-2005; "Environmental Crimes Case File: *Alkyon*," p. 22

Frost, J.R.
Vol. 61, No. 3; Search and Rescue; Fall 2004; "The Search and Rescue Optimal Planning System," p. 74

Furukawa, Jon
Vol. 61, No. 1; Proceedings at 60; Spring 2004; "Merchant Mariner Documentation, An Overview of a Credential's Evolution," p. 55

Gauvin, Robert
Vol. 61, No. 1; Proceedings at 60; Spring 2004; "International Convention for the Safety of Life at Sea, 1974," p. 36

Gilmour, Rear Adm. T. H.
Vol. 61, No. 1; Proceedings at 60; Spring 2004; "Assistant Commandant's Perspective," p. 4
Vol. 61, No. 2; The Marine Safety Center; Summer 2004; "Assistant Commandant's Perspective," p. 4
Vol. 61, No. 4; Environmental Crimes, Winter 2004-2005; "Assistant Commandant's Perspective," p. 4

Gonzalez, Lt. Cmdr. Johnny
Vol. 61, No. 3; Search and Rescue, Fall 2004; "Search and Rescue in the Eastern Caribbean," p. 27

Gronlund, Dr. Wayne
Vol. 61, No. 4; Environmental Crimes, Winter 2004-2005; "Mystery Oil: Who Spilled It?" p. 35

Hecker, Lisa
Vol. 61, No. 2; The Marine Safety Center; Summer 2004; "Regulatory Complexities, The Gulf of Mexico Oil and Gas Industry," p. 57

Hegy, Margie
Vol. 61, No. 1; Proceedings at 60; Spring 2004; "Technology Improves Navigation Safety, Waterways Management," p. 24

Hilbert, Lt. Patrick
Vol. 61, No. 2; The Marine Safety Center; Summer 2004; "SERT, A Valuable Resource Tool for Marine Safety Field Units," p. 17

Hollis, Lt. Robert Bryan
Vol. 61, No. 3; Search and Rescue; Fall 2004; "So That Others May Live," p. 64

Howard, Beverly
Vol. 61, No. 3; Search and Rescue; Fall 2004; "The Amver Program- Matching Distress Calls with the Vessel(s) Best Suited to Respond," p. 38

Kallen, Dawn
Vol. 61, No. 4; Environmental Crimes; Winter 2004-2005; "Illegal Sewage Discharges," p. 45

Karr, Capt. Michael B.
Vol. 61, No. 4; Environmental Crimes; Winter 2004-2005; "Champion's Point of View," p. 5

Kelly, Lt. Scott
Vol. 61, No. 2; The Marine Safety Center; Summer 2004; "Safety of Innovative Vessel Designs, Coast Guard Perspective in Utilizing Performance-Based Fire Protection Analysis to Create Novel Commercial Ship Designs," p. 66

Kime, Adm. J. William
Vol. 61, No. 2; The Marine Safety Center; Summer 2004; "History of the Marine Safety Center," p. 6

Kirchner, Albert G.
Vol. 61, No. 1; Proceedings at 60; Spring 2004; "Charting the Next Leg… Looking at the Course Ahead for Proceedings," p. 6

Krajewski, Lt. Jason
Vol. 61, No. 4; Environmental Crimes; Winter 2004-2005; "Environmental Enforcement Actions," p. 6

Kuhaneck, Scott
Vol. 61, No. 1; Proceedings at 60; Spring 2004; "Coast Guard Commences Enforcement of MTSA/ISPS Security Provisions," p. 43

Lechner, Lt. Ray
Vol. 61, No. 2; The Marine Safety Center; Summer 2004; "Subchapter O Endorsements for Gas Carriers," p. 54

Lee, Capt. Dean
Vol. 61, No. 3; Search and Rescue; Fall 2004; "Two Countries, Two Boats, One Common Cause- Who Leads the Pack?" p. 50

Leese, Ens. Eric D.
Vol. 61, No. 3; Search and Rescue; Fall 2004 "2003 Association for Search and Rescue at Sea Award Recipient," p. 41

Lemon, Dan
Vol. 61, No. 3; Fall 204; Search and Rescue; "Search and Rescue Responsibilities- The Big Picture," p. 31

Lidington, Hanna
Vol. 61, No. 4; Environmental Crimes; Winter 2004-2005; "Environmental Enforcement Actions," p. 6

Linsin, Gregory
Vol. 61, No. 4; Environmental Crimes; Winter 2004-2005; "Exercise of Prosecutorial Discretion in Vessel Pollution Cases," p. 13

Malinoski, Lt. Zach
Vol. 61, No. 2; The Marine Safety Center; Summer 2004; "Buffalo Marine Barges Continue to Impact the Inland Tank Barge Fleet," p. 26

Manzi, Kathryn
Vol. 61, No. 3; Search and Rescue, Fall 2004; "Improving Communications to Save Lives in the 21st Century," p. 71

Marshal, Petty Officer Cindy
Vol. 61, No.3; Search and Rescue, Fall 2004; "Ice Rescue in the Great Lakes," p. 23

Marsilio, Cmdr. Alan
Vol. 61, No. 2; The Marine Safety Center; Summer 2004; "Coast Guard Security Plan Review, A Success Story," p. 50

McAvoy, Lt. Cmdr. Kyle
Vol. 61, No. 2; The Marine Safety Center; Summer 2004; "SERT, A Valuable Resource Tool for Marine Safety Field Units," p. 17
Vol. 61, No. 2; The Marine Safety Center; Summer 2004; "Regulatory Complexities, The Gulf of Mexico Oil and Gas Industry," p. 57

McLaughlin, Diana
Vol. 61, No. 4; Environmental Crimes; Winter 2004-2005; "Slime and Punishment," p. 54

Myers, Joseph
Vol. 61, No. 3; Search and Rescue; Fall 2004; "Search and Rescue: The Last Safeguard," p. 84

Nadeau, Lt. Cmdr John
Vol. 61, No. 2; The Marine Safety Center; Summer 2004; "Buffalo Marine Barges Continue to Impact the Inland Tank Barge Fleet," p. 26

Najarian, Lt. Holly
Vol. 61, No. 2; The Marine Safety Center; Summer 2004; "Alternative Fire Suppression/Detection Systems," p. 48

Nash, Capt. Roy A.
Vol. 61, No. 2; The Marine Safety Center; Summer 2004; "Champion's Point of View," p. 5
Vol. 61, No. 2; The Marine Safety Center; Summer 2004; "Today's Marine Safety Center, Technical Services," p. 52

Netsch, Robert
Vol. 61, No. 3; Search and Rescue; Fall 2004; "The Search and Rescue Optimal Planning System," p. 74

Neubauer, Lt. Cmdr. Jason D.
Vol. 61, No. 1; Proceedings at 60; Spring 2004; "Coast Guard Commences Enforcement of MTSA/ISPS Security Provisions," p. 43

Norton, Capt. Dee
Vol. 61, No. 3; Search and Rescue; Fall 2004; "Benchmarking the Coast Guard's Search and Rescue System Against the World's Best," p. 58

Olsen, Ken
Vol. 61, No. 4; Environmental Crimes; Winter 2004-2005; "Wastes and Machinery Space Maintenance," p. 19
Vol. 61, No. 4; Environmental Crimes, Winter 2004-2005; "Improving Environmental Performance," p. 41
Vol. 61, No. 4; Environmental Crimes, Winter 2004-2005; "Someone Will Report," p. 48

Ovaska, Lt. Cmdr. Jeff
Vol. 61, No. 3; Search and Rescue; Fall 2004; "Search and Rescue Response System Overview," p. 6

Paitl, Lt. Cmdr. Joe
Vol. 61, No. 4; Environmental Crimes; Winter 2004-2005; "U.S. Navy's Military Sealift Command," p. 57

Pickles, Lt. Daniel
Vol. 61, No. 3; Search and Rescue; Fall 2004; "Rescue of *Miss Judith*," p. 46

Reams, Lt. Cmdr. Buddy
Vol. 61, No. 2; The Marine Safety Center; Summer 2004; "Foreign Passenger Vessel Safety, The Control Verification Program," p. 61

Rochon, Rear Adm. Stephen W.
Vol. 61, No. 3; Search and Rescue; Fall 2004; "Bravery Against All Odds: The Pea Island Rescue Retold Over a Century Later," p. 87

Rosello, Lt. Brad J.
Vol. 61, No. 2; The Marine Safety Center; Summer 2004; "SERT, Highlights of 2003 and Plans for the Future," p. 12
Vol. 61, No. 2; The Marine Safety Center; Summer 2004; "Foreign Passenger Vessel Safety, The Control Verification Program," p. 61

Rosen, Ellen
Vol. 61, No. 1; Proceedings at 60; Spring 2004; "A Look Back with Vice Adm. William F. Rea," p. 8

Sawyer, Capt. Steve M.
Vol. 61, No. 3; Search and Rescue; Fall 2004; "Champion's Point of View," p. 5
Vol. 61, No. 3; Search and Rescue; Fall 2004; "Making Preparations for a Mass Rescue Operation," p. 43

Schade, Lt. Derek
Vol. 61, No. 2; The Marine Safety Center; Summer 2004; "SERT, Highlights of 2003 and Plans for the Future," p. 12

Schaefer, Richard
Vol. 61, No. 3; Search and Rescue; Fall 2004; "Self-Locating Datum Marker Buoys, Technology Overdue, but Right on Time!" p. 78

Sirois, Rear Adm. Dennis R.
Vol. 61, No. 3; Search and Rescue; Fall 2004; "Assistant Commandant Perspective," p. 4

Sliwinski, Cmdr. Thaddeus
Vol. 61, No. 2; The Marine Safety Center; Summer 2004; "Where Can I Find Vessel/Facility Security Plan Information," p. 31

Spivak, Wayne
Vol. 61, No. 3; Search and Rescue; Fall 2004; "The Caribbean Volunteer Maritime Search and Rescue Initiative," p.15

Stern, Ens. Jim
Vol. 61, No. 1; Proceedings at 60; Spring 2004; "History of Port Security Within the Coast Guard," p. 28

Stilleke, Cmdr. Steve
Vol. 61, No. 3; Search and Rescue; Fall 2004; "Civilian Search and Rescue Controllers: Who Needs Them? We Do!" p. 62

Strong, Benjamin
Vol. 61, No. 3; Search and Rescue; Fall 2004; "Search and Rescue Plans of Cooperation," p. 82

Stuber, Chief Warrant Officer Kenneth D.
Vol. 61, No. 3; Search and Rescue; Fall 2004; "Storm Warriors in the 21st Century," p. 55

Weller, Alex
Vol. 61, No. 4; Environmental Crimes; Winter 2004-2005; "Environmental Enforcement Actions," p. 6

Willis, Thomas
Vol. 61, No. 1; Proceedings at 60; Spring 2004; "Coast Guard's Oldest Function Enters the 21st Century," p. 39

Wolf, Mark
Vol. 61, No. 2; The Marine Safety Center; Summer 2004; "Navigating the Maze of Vessel Standards and Alternate Compliance Options," p. 34

Coming up in Proceedings:

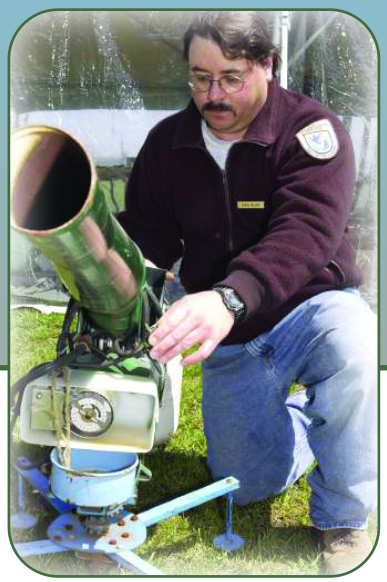
Spring:
International Ice Patrol

Summer:
National Maritime Center

U.S. Department
of Homeland Security

United States
Coast Guard

Buzzards Bay Oil Spill



Drew Major, a fish and wildlife biologist for the US Fish and Wildlife Service, prepares a propane cannon before sending it out to Ram Island. A propane cannon, also known as "boomers," is a noise deterrent used to scare birds away from an area. Ram Island was one of the most oiled islands in Buzzards Bay. PA2 Amy Thomas, USCG

Bouchard Transportation Co. (Hicksville, N.Y.) pled guilty in 2004 to violating the Clean Water Act by negligently causing the discharge of approximately 98,000 gallons of oil into Buzzards Bay in Southeastern Massachusetts on April 27, 2003. The oil barge its tugboat was towing traveled outside the Buzzards Bay channel and struck rocky shoals lying at a depth of 22 feet. BTC caused the oil spill because its employee, the mate in charge of the vessel, operated the tugboat in a negligent manner, which included leaving the wheelhouse for an extended period of time while underway and not monitoring radio communications. BTC allowed this individual to remain at the helm despite repeated concerns that were raised about his competency.

Petty Officer 3rd Class Bryan Nystrom, from the Atlantic Strike Team, inspects a snare/absorbent boom placed across an inlet to absorb the oil released into Buzzards Bay. PA2 Matthew Belson, USCG

BTC also pled guilty to violating the Migratory Bird Treaty Act by killing protected bird species as a result of this oil spill. The spill killed hundreds of federally protected birds, necessitated the closure of thousands of acres of shellfish beds in Buzzards Bay, and affected close to 90 miles of Massachusetts' beaches and coastline. BTC was sentenced to pay a $10 million fine—the highest fine in an oil spill case in New England.

A cormorant covered in oil rescued from the shore by a clean-up crew. The bird was taken to a rehabilitation set up to clean oil birds and wildlife affected by the oil spill in Buzzards Bay. PA2 Matthew Belson, USCG

The investigation was conducted by the Environmental Protection Agency's Criminal Investigation Division, the U.S. Coast Guard Investigative Services, and the U.S. Fish and Wildlife Service's Office of Law Enforcement, with assistance from the U.S. Secret Service and the Massachusetts Environmental Police. The case was prosecuted by Assistant U.S. Attorneys Jonathan F. Mitchell and Nadine Pellegrini, along with the Environmental Protection Agency's Senior Criminal Enforcement Counsel, Peter Kenyon. The federal investigation also received substantial assistance from Assistant Attorney General Paul Molloy of the Massachusetts Attorney General's Environmental Crimes Strike Force.

Steve Lehmann, scientific support coordinator from the National Oceanic and Atmospheric Administration, surveys an oil spill sheen while onboard a Coast Guard HH-60 rescue helicopter from Air Station Cape Cod. The mission of the overflight was to look for any impact from the Buzzards Bay oil spill. PA2 Matthew Belson, USCG